SOUTH MARKETING ISSUE
Pages 9-20

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oybean Growers Three States ear Quarantine

Nematodes Affect Tennessee, North Carolina, Missouri

EMPHIS, TENN.—In preparation possible quarantine measures that result from the public hearing eduled for Jan. 31 by the U.S. Detment of Agriculture, (Croplife, . 21, page 25), officials in the tri-e area of Missouri, Tennessee and rth Carolina, are studying the ex- and severity of the nematode in-tation in a number of counties. The roscopic soil pests are known to e infested soybeans, lespedeza and h in Lake County, in northwest- Tennessee.

he nematodes have also been re-ed in Pemiscot County, Missouri, oybeans. They have also been de-ed in North Carolina. A survey their range in the Tri-State area been held up by rainy and cold ther, Norman H. Causey, super-

(Continued on page 25)

iefings Set on reat of Foreign gricultural Pests

ASHINGTON—Four regional fings on insect and plant disease lems, with emphasis on pests of gn origin, have been scheduled the U.S. Department of Agricul-.

he Agricultural Research Service SDA is sponsoring the sessions at following sites:

utgers University, New Brunsk, N.J., Feb. 6-8; University of fornia, Berkeley, Cal., Feb. 13-15; versity of Minnesota, St. Paul, n., Feb. 18-20, and Mississippi te College, State College, Miss., . 25-27.

State agriculture officials are lping to plan the meeting proams. Entomologists, plant pathgists, nematologists and state d USDA research and regulatory ficials are expected to participate.

our major weapons wielded by eral and state personnel against nt pests will come up for discus-n.

Federal-state quarantines

(Continued on page 25)

FA Opposes Proposed ange in Guarantees

AN MARINO, CAL.—The Calinia Fertilizer Assn. is on record opposing the proposed change in tilizer guarantees from the oxide the elemental basis on phosphorus potassium. The association's rd of directors, by a vote of 11 to ook this action Jan. 11, at a meetheld in Los Angeles.

Estimated 1955-56 Fertilizer Consumption Shows 2.8% Drop; Use of Mixed Goods Down 3.9%

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Table 1—Estimated Fertilizer Consumption in U.S.

Region	Consumption[1]			Change from 1954-55		
	Mixtures	Materials[2]	Total	Mixtures	Materials	Total
	1,000 tons	1,000 tons	1,000 tons	Percent	Percent	Percent
New England[3]	353	70	423	- 3.4	- 6.4	-3.9
Middle Atlantic[4]	1,775	205	1,980	- 6.5	-11.0	-7.0
South Atlantic[5]	4,787	1,090	5,877	- 2.9	- 5.4	-3.3
East North Central[6]	3,369	1,128	4,497	- 4.3	+13.3	-0.4
West North Central[7]	1,177	865	2,042	- 8.4	- 3.9	-6.5
East South Central[8]	1,972	914	2,886	- 2.0	- 1.0	-1.7
West South Central[9]	701	666	1,367	- 1.0	+ 1.1	+1[14]
Mountain[10]	52	342	394	+ 0.4	- 8.5	-7.4
Pacific[11]	314	1,917	2,231	+ 5.6	+ 0.5	+1.2
Continental U. S.	14,500	7,197	21,697	- 3.8	- 0.2	-2.6
Territories[12]	249	150	399	-10.8	- 6.2	-9.1
Total: 1955-56	14,749	[13] 7,347	22,096	- 3.9	- 0.4	-2.8
1954-55	15,348	[13] 7,375	22,723	0.0	0.0	0.0
1953-54	15,541	[13] 7,232	22,773	+ 1.3	- 1.9	+0.2

1/ Includes fertilizers distributed by Government Agencies. 2/ Includes: Ground phosphate rock and colloidal phosphate, basic slag, secondary and trace element materials, such as borax, metallic salts, sulfur, gypsum, etc., used as separate materials. Does not include liming materials or the quantity of materials used for manufacture of commercial mixtures. 3/ Maine, N. H., Vt., Mass., R. I., Conn. 4/ N. Y., N. J., Pa., Del., D. C., Md., W. Va. 5/ Va, N. C., S. C., Ga., Fla. 6/ Ohio, Ind., Ill., Mich., Wis. 7/ Minn., Iowa, Mo., N. D., S. D., Neb., Kan. 8/ Ky., Tenn., Ala., Miss. 9/ Ark., La., Okla., Tex. 10/ Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev. 11/ Wash., Oregon, Calif. 12/ Hawaii, P. R. 13/ Materials not guaranteed to contain N, P_2O_5, or K_2O included in 1955-56 total, 779,000 tons; 780,308 tons in 1954-55; 615,513 tons in 1953-54. 14/ Less than 0.05 percent.

WASHINGTON—The estimated consumption of commercial fertilizer in the U.S. and territories (Hawaii and Puerto Rico) during the year ended last June 30 was 22,096,000 short tons, according to the preliminary fertilizer report of the U.S. Department of Agriculture.

This was a decrease of 628,000 tons or 2.8% from the quantity used in 1954-55. (See table on this page.)

Consumption of mixed fertilizers amounted to 14,749,000 tons, a decrease of 599,000 tons or 3.9%, while use of materials for direct application totaled 7,347,000 tons, a loss of 29,000 tons or .4% from the previous fiscal year.

Included in the materials for direct application are 6,568,000 tons of products containing one or more of the primary plant nutrients and 779,000 tons of secondary and trace nutrient materials. The tonnage of secondary and trace nutrient materials, of which about 85% was consumed in the Pacific region, was practically the same as that in 1954-55.

The preliminary report was prepared by Walter Scholl, Esther I. Fox, Hilda M. Wallace and Florence Grammatte, Fertilizer and Agricultural Lime Section, Soil and Water Conservation Research Branch, Agricultural Research Service, USDA.

There was a decrease in the total fertilizer consumption in seven of the nine regions of the continental U.S. and in the territories. Slight gains occurred in the West South Central and Pacific regions.

Approximately 79% of the decrease in total fertilizer consumption occurred in the Middle Atlantic, South At-

(Continued on page 24)

North Carolina Group Told Search Continues for More Potent Pesticide Chemicals

RALEIGH, N.C.—The search for more effective, more economical pesticides brought more than 200 dealers, formulators, manufacturers, county agents, farm superintendents, and vocational agricultural teachers to the 1957 Pesticide School at North Carolina State College.

The two-day program, Jan. 10-11, was conducted by the college's School of Agriculture and extension division and covered the latest research data on various herbicides, fungicides, insecticides and rodenticides. In addition to talks on effective pesticides for a wide variety of crops grown in the area, the session featured equipment demonstrations and exhibits, along with the release of the North Carolina State College 1957 Pesticide Manual.

H. R. Garriss, in charge of the college's plant pathology extension, served as program chairman with J. C. Wells, plant pathology extension, G. C. Klingman, field crops department, and W. M. Kulash, entomology department, presiding.

"We must learn to live with some pests," D. S. Weaver, director of the college's extension service, commented in welcoming the group.

Mr. Weaver pointed out that the present agricultural progress has resulted from research and education. Continuing, he stressed the aim of the annual school—to educate the public and the manufacturers to new developments devised to make farmers more efficient producers and to ad-

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House Bill Ties Corn Acreage to Soil Bank

Measure Sets 51 Million Acre Allotment

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—The House Agriculture Committee was to open hearings on Jan. 28, on HR 3011, a bill to provide an acreage allotment of 51 million acres for the 1957 corn crop. An accompanying requirement is that 15% of such acreage will have to be placed in the soil bank as a condition of price support at $1.36 a bushel. Land thus taken out of the corn acreage allotment would have to be withheld from other field crop production, which would ex-

(Continued on page 21)

THIS ADVERTISEMENT sells new Hi-D Ammonium Nitrate Fertilizer. It appears in February issues of *Capper's Farmer, The Progressive Farmer, Prairie Farmer, Farm & Ranch,* and *Florida Grower and Rancher.*

Farmers asked Question after Question about Hi-D Ammonium Nitrate

ead the kind of down-to-earth questions that many farm-rs fired at us and you'll see why they decided to make Hi-D mmonium Nitrate their first choice as a supplemental itrogen Source.

Q. What's this "Hi-D" and what's so new about it?

A. Hi-D stands for high density. Hi-D Ammonium Ni-trate is a hard, dry fertilizer that's made by an ex-lusive, patented process. It's a denser product with the aximum moisture "squeezed" out of it before the granule formed. There isn't another form of ammonium nitrate ke it!

Q. What about storage?

A. Commercial Solvents Corporation guarantees that Hi-D Ammonium Nitrate will store well under nor-al conditions for one full year. And, by the way, that rings up another advantage of Hi-D. Being a denser, ore compact material, it has less bulk, takes up less room storage. 10 bags stack in the same space as 8 bags of ther types of ammonium nitrate. That means you can et up to 25% more nitrogen in a normal hopper load.

Q. Well, how does this denser material perform in the spreader?

A. High density means a drier ammonium nitrate. And that means that Hi-D doesn't gum up, doesn't stick, log, cake or bridge, even on soggy, steamy days.

Q. How does it spread? Hi-D looks different.

A. You're right, Hi-D *is* different. Note the controlled size and unique shape that assure smooth, even dis-ribution in all types of spreading equipment under all field onditions. The beauty of it is that it really flows freely, preads evenly and stays put!

Q. Doesn't this same high density make for slower action in the soil?

A. Absolutely not. Hi-D dissolves readily in soil mois-ture, goes to work fast. But as you probably know, Hi-D Ammonium Nitrate gives Two-Step Action. The uaranteed 33.5% N comes in two balanced "servings". You et 16.75% nitrate nitrogen that goes to work immediately or fast, vigorous starts, and 16.75% ammonia nitrogen for ustaining follow-up feeding. Interesting thing about Hi-D, t contains the kind of nitrogen in sodium nitrate *and* the ind in ammonium sulphate as well.

Q. It ought to be better than sodium nitrate and ammonium sulphate—it costs more per bag. What do you say about that?

A. No, no, it costs less! Sure, bag for bag it costs more, but you forget you're not buying bags, you're buy-ng *N*. 100 pounds of Hi-D gives you as much nitrogen as 159 pounds of ammonium sulphate, gives you as much nitrogen as 209 pounds of sodium nitrate. Putting it another way, for 100 pounds of straight N you need over 600 pounds of soda, nearly 500 pounds of sulphate, *but only 298 pounds of Hi-D*.

Q. They say that ammonium nitrate is acid forming. Is Hi-D?

A. Acid forming is just another way of saying that growing crops remove calcium from the soil. Hi-D helps make big crops which take out more calcium than small crops. Of course, some products do include lime but it's an expensive way to get insufficient limestone. As you know, the lime in such products is only enough to neutralize the fertilizer. It's not sufficient to meet the important requirements of a sound, integrated liming program.

Q. Where does Hi-D fit in my fertilizer program?

A. Good question! It gives us a chance to stress mixed fertilizers. We don't sell mixed goods but we can't overemphasize their importance. Hi-D is not a substitute for mixed fertilizers. It's a supplement. Many crops take more nitrogen from the soil than can be put back readily in mixed fertilizers. The role of supplemental nitrogen is to satisfy this additional need. In many cases supplemental nitrogen is the lowest-cost way to get maximum profits. Hi-D Ammonium Nitrate is only one part of your program for lowering crop unit costs. You know better than we do that income goes down unless production per acre goes up. Fertile land is profitable land. Land fertility calls for soil testing, a liming program, the mixed fertilizer your dealer recommends — then, and only then, Hi-D Ammonium Nitrate as needed.

SEE YOUR DEALER. *Ask your dealer for a sample of this new high density material. Look for the GREEN & WHITE BAG. Put Hi-D to work this season. Test it side by side with any other nitrogen fertilizer you want to—on any crop, under any condition. You can trust Hi-D to do the job in the field and in the yield.*

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Georgia Society Gets Plan for Boosting Farm Income by $400 Million

ATHENS, GA. — A program to boost Georgia's agricultural income by $400,000,000 annually through the use of better production and marketing practices was outlined to members of the Georgia Plant Food Educational Society at their annual meeting Jan. 14-15 on the campus of the University of Georgia at Athens.

Speaking on "Today's Situation, Today's Problems and Tomorrow's Action," Dr. C. C. Murray, dean and coordinator of the College of Agriculture, unveiled the $400,000,000 program which had been prepared for consideration by farmers, professional workers, business and industrial leaders and others interested in a progressive and profitable agriculture.

Members of the fertilizer industry present responded almost immediately to the dean's challenge by presenting a new soil fertility program for Georgia which, they say, will enable farmers to make half of this new income available through the use of a proper fertilization program.

Georgia's agriculture represents a capital investment of $2,700,000,000 in lands, buildings, machines, livestock and financial assets, Dean Murray pointed out, and the 800,000 farm people who tend the farms and manage the timberlands of the state produce an annual income of approximately $790,000,000.

"In attempting to set up realistic and attainable goals for agriculture it must be realized there are many programs, situations and forces which must be taken into consideration," he said. "Within the framework and in the context of our present national farm program and agricultural policy, there are certain restrictions and limitations within which we must plan and project a program to best utilize our resources and provide our farmers with maximum returns.

"For these reasons, our immediate attainable farm income potential falls far short of what it could be and what we all would like to see it become. Nevertheless, under present economic circumstances, there exists most challenging and real opportunities to markedly improve our farm income. These opportunities lie, to the most part, in raising our crop yields per acre and increasing the output per animal unit."

To bring about this $400,000,000 annual increase in farm income within the framework of our present farm policy, Dean Murray cited the following attainable potentials:

1. Increase productive land over two million acres by putting idle land either in crops, pastures or trees depending on the use to which the land is best suited;
2. Double average yields of feed crops by good management and proper use of fertilizers, varieties, insect and disease control and other production practices;
3. Increase average yields of cash crops (cotton, peanuts, tobacco, etc.) by 50% by good management, proper use of fertilizers, varieties, disease and insect control and other production practices;
4. Double average pasture production by use of improved grasses and legumes, good management, proper use of fertilizers and other good production practices, and
5. Double output from forest land by establishment of full stands of proper species intelligently managed and protected.

What would the accomplishment of these five potentials mean to Georgia farmers and the people of our state in terms of current prices? Dean Murray said the income from cash crops could be increased from $393,228,000 to $589,842,000, an increase of $196,614,000, while the income from livestock could be increased from $251,743,000 to $386,214,000, an increase of $134,471,000. In addition, the income from forest products could be increased from $73,600,000 to $147,200,000, an increase of $73,600,000, making a total increase of $404,685,000.

Three things must be done to attain this increase in farm income, the agricultural leader asserted. They are (1) provide the necessary capital, (2) provide adequate research and educational programs and (3) provide adequate markets and more efficient marketing system.

Lack of these things, he continued, is a reason Georgia farmers are not now realizing this additional income. Specific reasons listed by Dean Murray included (1) inadequate available capital for operations and long-term investments, (2) the lack of a more adequate resident teaching, research and extension program in the College of Agriculture, as well as educational and service programs of other state and federal agencies, (3) failure on the part of operators to get available information and put it into use, and (4) inadequate markets in some areas for some products.

In crop production, Dean Murray called for the use of the best production practices on the land best suited, use of proper varieties, use of recommended fertilization and insect control practices, lowered harvesting costs and better marketing practices to help bring about the $400,000,000 increase in income.

In concluding, Dean Murray, who is an agronomist, appealed to members of the Plant Food Education Society to join hands with the college and other groups and organizations in bringing about developments which will produce larger net income among farm people and a stronger state economy.

"Agricultural progress requires the teamwork of many groups," he said. "Farmers are basically producers but their concern extends throughout the marketing chain to the ultimate consumer. They are large purchasers of commodities and are therefore interested in the entire area of services provided to rural areas. They depend upon research and education for facts and assistance in the improvement of their businesses and homes."

Russell Coleman, executive vice

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sident of the National Plant Food
itute, Washington, accepted Dean
ray's challenge by responding on
dustry's Responsibilities in Aiding
rgia Farmers to Attain Greater
t Farm Income." He called on
mbers of the industry to join
ds with their allies in increasing
me. He stressed the importance
manufacturers and dealers believ-
in their product, in knowing it
in knowing what it will do for
ers.

n a talk illustrated with slides,
Coleman declared "we must
w we have a priceless product
t is low in cost. Plant food prices
e increased only 10% since 1939
le other products have increased
%. Fertilizer, in terms of prices
farm products, is a better buy to-
than it was 25 years ago."

He cited Georgia tests to show at where fertilizer usage was in-eased three times on corn, the eld increased three times and the it cost of production dropped %. "We have a product farmers nnot do without," he continued. n most cases they must use it have any net profit."

The work of the Agricultural Ex-sion Service in taking research in-mation to Georgia farmers has de our work easier, Dr. Coleman d. He called attention to demon-ations conducted by Georgia farm-in cooperation with the extension vice which have shown that use more fertilizer means more prof-

"How much of the $400,000,000 tential increase in Georgia farm ome is slipping through the hands Georgia farmers?" he asked. "At st $200,000,000 could be recovered ough the use of fertilizer."

Following his presentation, mem-s of the society participated in a scussion of contributions the rgia Plant Food Educational So-ty could make to the program. e discussion was led by J. W. Fan-g, chairman of the agricultural nomics division of the College of riculture and featured statements J. R. Johnson, extension agrono-st and project leader; T. Hayden gers, head of the agronomy de-rtment; P. J. Bergeaux and R. L. hunt, extension agronomists, and rence Walker of the industry re-ions department of the Coca-Cola

In his part of the program, Dr. ehunt showed copies of a new rn chart, developed by the indus-y in cooperation with the Ex-nsion Service, which out-lines a ur-step program to increase farm come by $200,000,000 through the e of the right amounts of the roper kinds of fertilizer.

Copies of these charts will be dis-buted by county agents to banks, tilizer dealers, seed dealers, voca-nal agriculture teachers and ers in a position to advise farm-on the part fertilizer plays in reasing farm income.

At the annual banquet, when new cers were announced, Monroe M. nbrel, president of the Georgia nkers Assn., spoke to the group on ertilizer, Fertility and Finance."

"Few groups," he asserted, "are ng as much as you in bringing ut progress in our state's agri-ture and no compliment could be great for the work you are do-." Although 8% of the gross farm ome in the state is being spent fertilizer, Mr. Kimbrel said rgia farmers could profitably use ce as much.

Banks in the state, he continued, very interested in what members he society do because the average farm investment in Georgia is $17,000 and "we have a right to concerned about efficient opera-."

During the banquet, J. R. Johnson, ension agronomist and project der, was presented with lifetime mbership in the society for his

Robert J. Steward Named Oregon Agriculture Director

PORTLAND, ORE. — Robert J. Steward, state representative from eastern Oregon, has been appointed Oregon director of agriculture, by Gov. Robert Holmes. James F. Short, present director, has agreed to stay in office until the session is completed.

"Replacement of Jim Short is in no way a reflection on his record of fine service to the department and to the state," Gov. Holmes said. "We are genuinely appreciative of his fine work and the excellent cooperation he has given me and his office." The decision to appoint Mr. Steward was based on his announced plan to pick the members of his own team to serve in key positions, the governor said.

Mr. Steward, 46, is owner of a range cattle ranch in Keating in the Lower Powder area of Baker County.

JOINS REPORTING SERVICE

SACRAMENTO — W. Ward Henderson, formerly head of the Enumerative Surveys Section, U.S. Department of Agriculture, has been named assistant chief of the California Crop and Livestock Reporting Service. He holds a degree of master of science in agriculture with a major in agronomy from Rutgers University.

Northeast District — Malcolm Rowe, Rowe Warehouse and Fertilizer Co., Athens, vice president; and C. R. Mason, Mason Gin and Fertilizer Co., Madison; Charles Frederick, F. S. Royster Guano Co., Athens, and Steve Reynolds, Tennessee Corp., Commerce, directors.

Northwest District — W. J. Cook, Adair and McCarthy, Alanta, vice president; and W. L. Baughcum, International Minerals and Chemical Corp., East Point; Henry Mauldin, Mauldin Feed and Seed Co., Calhoun, and Julian Reames, Armour Fertilizer Works, Atlanta, directors.

Southeast District—John Cope, Reliance Fertilizer Co., Savannah, vice president; and George Brantley, Blackshear Manufacturing Co., Blackshear; R. E. Cole, Cole Fertilizer Co., Hazelhurst, and O. A. Wolfe, Roche Manufacturing Co., Dublin, directors.

Southwest District—G. L. Dozier, Cotton States Fertilizer Co., Macon, vice president; and John Allman, Southern Cotton Oil Co., Macon; R. L. Hadden, Farmers Mutual Exchange, Moultrie, and J. P. Champion, Jr., Albany Warehouse Co., Albany, directors.

J. E. Nunnally of the Cotton Producers Assn., Atlanta, was elected director at large.

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Recommendations for Insect and Weed Control Given at Kentucky Conference

LEXINGTON, KY.—Manufacturers, dealers and fieldmen of insecticide and herbicide companies and entomologists and agronomists of the University of Kentucky discussed some of the latest recommendations in insect and weed control at a conference Jan. 16.

Speakers included David Daugherty, Dr. Mallory Boush, Dr. J. G. Rodrequez, Howard Tilson, Dr. Kenneth Starks, Dr. Richard Thurston and J. F. Freeman, university research men.

Dr. Starks said annual insect damage to Kentucky crops and livestock is about as follows: tobacco, $24 million; cattle, $20 million; corn, $11 million; hogs, $5 million; chickens, $4½ million; harvested hay, $2½ million; soybeans for beans, $900,000; bluegrass seed, $200,000; lespedeza seed, $200,000; strawberries, $200,000; apples, $90,000 and peaches, $50,000.

How dieldrin is being used to check the Japanese beetle in Kentucky was reported by Mr. Tilson. This material in granular form is sowed on the ground and rain washes it in. It has been very effective, he said. When the beetle first was found in Kentucky in 1938, 1,000 lb. lead arsenate an acre killed it. Then DDT was used, and finally dieldrin.

Kentucky being largely a grass and hay state, the Japanese beetle could do millions of dollars in damage any season, Mr. Tilson said. In their larval stage they eat roots of many crops, and when mature they attack corn and other grains and most kinds of fruits.

Aldrin and heptachlor were recommended for the control of such pests of corn as rootworms, seed corn maggot, ants, white grubs and wireworms. Rates of application are two-thirds to 1⅓ lb. actual of either aldrin or heptachlor per acre. These materials may be used as emulsion concentrate, granular insecticide or in fertilizer mixtures.

Aldrin, heptachlor and chlordane have been effective in the control of ordinary pests of strawberries, such as ants, crown borers, rootworms, white grubs and wireworms. Toxaphene and dieldrin have been used to control cutworms, and also to kill grasshoppers.

Dr. Thurston said millipedes have been exceptionally troublesome in Lexington, especially where new subdivisions were being started. The woods seem to be full of them, and they swarm over on to the new houses, causing annoyance to housewives. The bugs are attracted by electric lights, windows, etc.

The chemical 2,4-D continues to hold top place as a killer of broadleaf weeds in corn, researcher J. F. Freeman reported. Where crabgrass and other annual grasses also are bothersome, the ester form of 2,4-D gives good results when used as a pre-emergence spray. The rate is usually 1 to 2 lb. an acre, it was pointed out. On river bottoms, where much of the Kentucky corn is grown, late weeds give trouble. Drop nozzles are used after the last cultivation, a heavy dose placed between rows with lesser amounts on rows.

Dr. Rodrequez mentioned the growing popularity of granular insecticides. He said they are easy to handle, clean, leave less residue on foliage and leaves and are especially good for the control of the cornborer. They also tend to penetrate vegetable cover, he said. They are especially useful for airplane dusting.

It was noted that chlordane is given as one of the suggested insecticides for use on strawberries and tobacco and is not suggested for corn.

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

Pfizer Says New Product Fights Bacteria, Fungus Simultaneously

BROOKLYN—Chas. Pfizer & Co., Inc., said recently that it has developed new antibiotic compositions for use in plant sprays or dusts that, for the first time, fight both fungus and bacterial diseases simultaneously. The compositions were given U.S. patent No. 2,777,791 Jan. 15, 1957.

The patent covers two such compositions: one using the antibiotic Streptomycin with a substantially water-insoluble copper fungicide, and the other using Streptomycin and such forms of copper with Pfizer's Terramycin.

Pfizer plans to market the latter solution early this spring under the trade name "Agri-mycin 500."

A spokesman for the company said that Terramycin, in combination with Streptomycin, has been proven effective against bacterial diseases of plants. Pfizer now widely markets such a preparation under the trade name Agri-mycin. The copper solution has long been used successfully against plant fungus.

The newly-patented combinations bring together the copper and the antibiotics for the first time in a single spray, which tests have shown to be synergistic.

The inventors credited with this discovery are Dr. George L. McNew and Alvaro Goenaga of Boyce Thompson Institute for Plant Research, Inc., and Frederick C. Visor and George Koch of Pfizer's Brooklyn, N.Y., laboratories.

Testing was completed on the new product at Boyce Thompson Institute and at various U.S. Department of Agriculture experimental stations around the country.

According to Pfizer, the Agri-mycin plus copper solution—or, as it will be known, "Agri-mycin 500" — has been effective for such common plant diseases as bacterial blight of celery, bacterial spot of tomatoes and peppers, downy mildew of lima beans and cucurbits, blue mold of tobacco and bacterial and fungal diseases of ornamental plants.

The main component of the new compositions, Agri-mycin, has been marketed by Pfizer for the past two years.

Dorr-Oliver to Expand U.S., Canadian Production Capacity

STAMFORD, CONN.—Dorr-Oliver, Inc., has announced plans for major expansion and re-allocation of its U.S. production facilities and a further expansion of Dorr-Oliver-Long, Ltd.'s plant at Orilia, Ontario.

The program for Dorr-Oliver involves centralization of all domestic filter manufacture at the already expanding Hazleton, Pa., plant. The plan also calls for conversion of the Oakland, Cal., plant to a semi-production type facility where such units as pumps, centrifugals, DorrClones and D-Sanders will be manufactured using semi-mass production methods.

The D-O-L plan for the Orillia, Ontario, plant is an extension of an expansion program begun early in 1956 and is designed to increase manufacturing capacity to meet growing sales volume and potential. This plan, also involving new equipment in addition to expansion of existing facilities, is scheduled for completion this year.

CONTROLLED
QUALITY
COMPLETE STRESS RELIEVING ON BEAIRD LPG-NH3 STORAGE TANKS

Engineers will tell you that stress relieving produces safer, more dependable storage vessels by eliminating internal stresses set up during forming, rolling and welding of tank sections. This important safety feature is available from Beaird, Shreveport, where one of the South's largest stress relieving furnaces is in operation.

Capable of handling tanks up to 75,000 gallons capacity, the stress relieving furnace has been installed as part of the storage tank assembly line. This permits volume production of stress relieved tanks without change or delay in shipping schedules.

When you buy LP-Gas or Anhydrous Ammonia Storage from Beaird you get the Beaird plus—"Controlled Quality Construction." This includes these important safety features.

Double inspection—By Beaird's skilled inspectors
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Submerged arc machine welding
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Complete stress relieving
Built to meet or exceed code requirements

Why accept less safety and quality? Check with Beaird on "Controlled Quality" pressure storage vessels for your next installation.

One of the Largest Stress Relieving Furnaces in the South.

BEAIRD
THE J. B. BEAIRD COMPANY, INC.
Shreveport, Louisiana
Clinton, Iowa
Stockton, California
LP-Gas Anhydrous Ammonia Pressure Bulk Storage Transports Filling Station

Frank McGrane

ank McGrane Heads ew Sales Section f American Potash

LOS ANGELES — A consolidation all agricultural chemical products der a new sales section of Ameri- n Potash & Chemical Corp. has en announced by William M. Clines, estern general sales manager.

Frank McGrane was appointed ad of the new section, which will ndle fertilizer, fumigant and in- cticide products manufactured at e company's Los Angeles plant and ona (Cal.) plant. Mr. McGrane rmerly was head of western potash les for AP&CC.

Al Swain, long-time manager of ricultural chemical sales for the s Angeles plant, becomes a com- ny consultant under the new ar- ngement. W. E. Horn, California d Arizona district sales manager, d Ellis C. Kent, southern California les representative, will continue in eir districts and will handle the panded line of products in these eas.

isconsin Fertilizer onference Scheduled

MADISON, WIS.—The 1957 Wis- nsin Fertilizer & Lime Dealers onference will be held Feb. 4 at emorial Union Theater, University Wisconsin during the Farm and ome Week program. J. T. Murdock chairman.

W. R. Allstetter, vice president of e National Plant Food Institute, ashington, will talk on "the Ferti- zer Industry's Role in Wisconsin griculture."

University of Wisconsin staff mem- rs and their topics will be O. J. ttoe, chairman of the soils depart- ent, current research in soils; K. Berger, soils department, trace inerals; L. E. Engelbert, soils de- rtment, lime, and C. J. Chapman, ils department, "Food Unlimited."

aryland Agricultural hemical Sessions Set

COLLEGE PARK, MD.—Sites of ree University of Maryland agricul- ral chemical conferences, to be ld in February, have been an- unced by Dr. L. O. Weaver, pro- ssor of plant pathology at the uni- rsity and chairman for the con- rences.

They will be held at the Episcopal rish Hall in LaPlata Feb. 12, the unty Bldg. in Easton Feb. 13 and e Francis Scott Key Hotel in ederick Feb. 15.

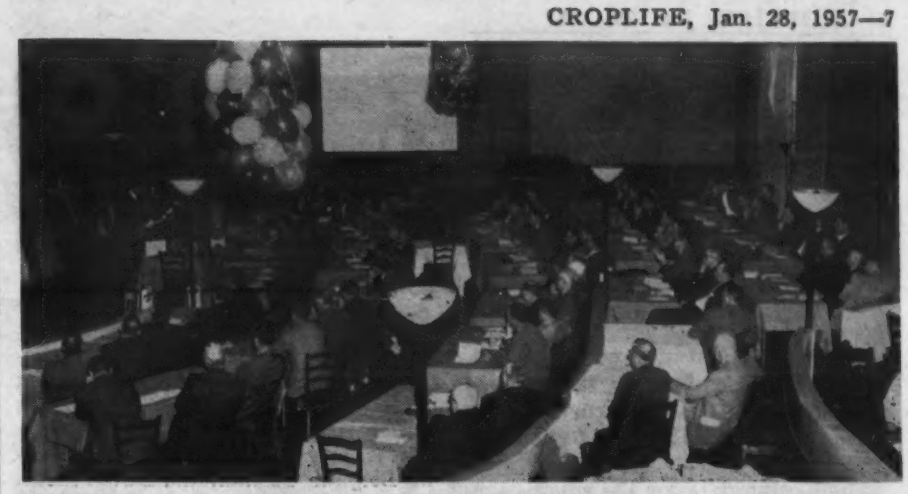
Each conference begins at 9:30 m. and ends about 3:30 p.m. Uni- rsity staff members will talk on bacco insects, plant disease con- ol, weed control, vegetable insects, rage crop insects, nematode con- ol and lawn and ornamental in- cts.

Growers Ask Relaxation Of Spray Restriction

SAN FRANCISCO — Some two dozen grain raising farmers in Central California have requested the California state government to relax certain requirements concerning the use of injurious herbicides. The farmers are plagued with such noxious weeds as morning glory, wild radish, and mustard. They request permission to use 2,4-D in high volatile liquid. A series of hearings are being conducted by Allen B. Lemmon, chief of the division of plant industry of the State Department of Agriculture, concerning the relaxation of the provision.

DATES CHANGED

NEW YORK—The New York Garden Supply Show will be held at the New York Coliseum Feb. 17-19. The event previously had been scheduled for Jan. 13-15 at the Kingsbridge Armory.



FEDERAL SALES MEETING—Federal Chemical Co., plant food manufacturers, and one of Louisville's oldest firms, held its general sales meeting Jan. 10-11 to kickoff the 1957 promotion of its new fertilizer. More than seventy-five sales representatives from ten states and company officials gathered for sales and advertising sessions in the Terrace Room of the Kentucky Hotel. Federal Chemical Co., founded in 1884, serves a territory covering the states of Kentucky, Tennessee, Ohio, Indiana and Illinois and portions of Alabama, Mississippi, Missouri, Michigan and Wisconsin.

NOW you can formulate high concentrate wettable powders at low cost with MICRO-CEL

SUBSTANTIAL FORMULATION SAVINGS

Micro-Cel*, a new line of synthetic calcium silicates, has extremely high absorptive properties. It is this remarkable capacity for absorption that makes it possible to prepare wettable powders with higher concentrations of dry, viscous or liquid poisons. Micro-Cel's absorption also means that more lower cost diluents can be used. Thus high strength formulation costs are now cut to a new low.

REMAINS FREE-FLOWING—MEETS STORAGE TESTS

With Micro-Cel, these high concentrates will remain in a free-flowing state even after prolonged storage. This is particularly important in producing poisons for the export market.

In addition, suspension values after storage of 1.5 to 2.0 I.C.A. have been achieved in 75% DDT wettable powders, based on Micro-Cel. This is more than adequate for storage conditions encountered in most tropical countries.

DEVELOPED BY JOHNS-MANVILLE RESEARCH

Micro-Cel is another development of Johns-Manville Research. Combining high absorption, large surface area, small particle size and excellent dry flowability, it offers a unique combination of properties for insecticide formulation and other process needs.

Sample quantities and carload shipments are now available. Write for further data and sample formulations for poisons of interest to you. Or ask a Celite engineer to help you adapt Micro-Cel to your particular requirements and specifications.

*Micro-Cel® is Johns-Manville's new absorbent-grinding aid designed specifically for the insecticide formulator.

Johns-Manville
MICRO-CEL
SYNTHETIC CALCIUM SILICATES
A PRODUCT OF THE CELITE DIVISION

Johns-Manville, Box 14, New York 16, N.Y.
In Canada: Port Credit, Ontario
Please send ☐ further information; ☐ samples of Micro-Cel. I am interested in using Micro-Cel with the following poisons:

☐ Please have your local representative contact me.

Name _____ Position _____
Company _____
Address _____
City _____ Zone _____ State _____

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

The government of Greece has now extended the deadline for the acceptance of bids for the construction of a nitrate fertilizer plant at Ptolemais. (Croplife, Sept. 17, page 1.)

The closing date for the submission of bids, originally set at Jan. 14, has been extended to March 14. Cost of the plant has been estimated at $30 million. A copy of the bid announcement is available for review on loan from the trade development division, Bureau of Foreign Commerce, Department of Commerce, Washington. Handling the matter for the Greek government is the Ministry of Coordination, II Directorate General, Direction of Industry, 3 Amerikas Street, Athens.

Bids have been received from Italian, Belgian, German and Dutch firms. The Greek authorities, it is understood, have extended the deadline because they would like to see more bids from American and British firms.

Fumigants and Grain

Fumigants used to control insects in farm-stored grain vary not only in toxicity to the insects, but also in the degree to which they can penetrate to the botton of the pile of grain.

This is the finding of B. Berck of the Canadian Department of Agriculture's stored product insect laboratory in Winnipeg. He is currently engaged in an analytical study of fumigant behavior in stored products such as grain and flour. He has shown that fumigants consisting of mixtures of two or more chemicals behave differently in stored grain, depending upon the chemical composition of the mixture. For example, he has found that considerably greater amounts of fumigant, ethylene dibromide, penetrate to the bottom of the grain pile when it is mixed with two other fumigants, ethylene dichloride and carbon tetrachloride, than when used alone or mixed with methyl bromide. This deeper penetration, he says, also results in improved toxicity or poisoning effect on insects.

While differences in the pentration characteristics of single fumigants had been indicated in previous tests, Mr. Berck's tests are believe to be the first time that the di tribution patterns have been eval ated chemically.

Factors that affect downward pe tration of fumigants through gra are moisture content and temperatu of the grain, the amount of we seeds of high oil content, and t nature and amount of fumigant a plied.

Infestation of farm stored grain a major problem in Canada right no Stocks are heavy and producers a being asked to make careful checks their holdings. Serious losses, th have been warned, can result if co trol measures are not exercised.

Burmese Plant

The Burmese Industrial Develo ment Corp. is inviting bids for a s perphosphate, sulfuric acid and fer lizer mixing plant. Closing date f the bids is March 1. Copies of t tender notice may be obtained fro the corporation's technical depar ment located at 53 Halpin Ro Rangoon.

Australian Brimstone

In 1956 Australia used 557,200 to of brimstone and 240,600 tons pyrites. Growth of the industry is ev denced by a comparison with 19 usage—278,000 tons and 112,600 to respectively.

The need to import brimstone causing the Australian authoriti some concern. In 1956, imports in creased by 18,000 tons to 205,000 to and 95% of this came from the U and Mexico. Involved was dollar e penditure of 8 million, a big drain o the country's resources of hard cu rency.

The government has appointed sulfur and sulfuric acid advisory com mittee. A major aim is to increase th use of locally-produced materials i order to cut down on imports.

The production of superphosphat in the year ended June 30, 1956, wa 2,126,000 tons, compared with 1,961 000 tons in the previous year. Sulfur acid production totaled 895,000 ton against 827,000 tons. The deman traders say, is still growing.

Brazilian Needs

During the 1955-56 fiscal year, th production of fertilizers in Brazil to taled 5,100 tons in terms of nitroge content and 39,000 tons, phosphat content. But the needs of the countr are way above productive capacity.

Imports, except of nitrogenous fer tilizers, are increasing. Brazil pro duces no potash and in 1955-56 th import need was 49,400 tons, up 28% over the previous year. Imported phosphates totaled 28,162, twice as much as in the previous year. Nitro gen imports, set at 15,169 tons, how ever, declined by 33%.

Lower foreign exchange rates tend ed to encourage imports and to dis courage local production. Added to this favorable factor for foreign sup pliers, however, is the growing aware ness of the value of fertilizers in step ping up agricultural production, situation typical of most South Amer ican countries.

Estimates for Fertilizer Carloadings Down

WASHINGTON—A total of 119,4 carloadings will be required for ferti lizers during 1957, the Regional Ship pers Advisory Boards have estimate This would be a .6% decline fro actual carloadings of 120,266 for fer tilizer in 1956. The new forecast wa released by the Association of Amer ican Railroads.

In New Building

PHOENIX—Inland Fertilizer C has moved into its new $42,000 offic building and warehouse at 3601 W Clarendon here. The firm had bee located the past two years at 19 W. McDowell. Mrs. Hazel Danfor is president of the company.

Why it pays to sell the name that's known and trusted in important Farm Markets:

Profit and the pride in selling products that help your customers are the big reasons you are in business. Combine all of Phillips *66* multitude of satisfied farm users and *you* get a big advantage in selling Phillips *66* Ammonium Nitrate to *your* customers. Further, you have the assurance that the production of Phillips *66* Ammonium Nitrate is backed by the same progressive research that has made Phillips such a fast growing organization.

So, sell with confidence for present and future profit . . . sell with a leader—Phillips *66* Ammonium Nitrate.

. . . and Phillips 66 Ammonium Nitrate offers you these big profit advantages:

1 *Consistent, convincing advertising* of Phillips *66* Ammonium Nitrate. This includes outstanding state and regional farm papers . . . and radio—all pre-selling Phillips *66* Ammonium Nitrate for you.

2 *An outstanding product,* backed by all of the vast resources of Phillips laboratories, manufacturing facilities, plus actual use on thousands of farms. Phillips *66* Ammonium Nitrate is prilled to flow freely, handle easily.

3 *Personal service* from your Phillips *66* Fertilizer field man and prompt deliveries are included in the many profitable extras you get from Phillips *66*.

Call your nearest Phillips office, listed below, for help in planning a bigger and more profitable 1957.

A companion high nitrogen fertilizer for your quality mixed goods.

PHILLIPS CHEMICAL COMPANY
A Subsidiary of Phillips Petroleum Company, Bartlesville, Oklahoma

Offices In:

AMARILLO, TEX.—*First Nat'l Bank Bldg.*
ATLANTA, GA.—*1428 West Peachtree Street*
BARTLESVILLE, OKLA.—*Adams Bldg.*
CHICAGO, ILL.—*7 South Dearborn St.*
DENVER, COLO.—*1375 Kearney Ave.*
DES MOINES, IOWA—*6th Floor, Hubbell Bldg.*
HOUSTON, TEX.—*1020 E. Holcombe Blvd.*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
NEW YORK, N. Y.—*80 Broadway*
OMAHA, NEB.—*6th Floor, WOW Building*
PASADENA, CALIF.—*330 Security Bldg.*
RALEIGH, N. C.—*804 St. Mary's St.*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 E. Sprague*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*3737 Neptune St.*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*

Special Merchandising Section

Better Selling

Marketing News and Features

PROMOTES PACKAGE DEAL—John J. Mangum, manager of Texas Farm Supply, Bay City, Texas, is shown above beside one of the firm's five airplanes, used in a package deal in which the company sells, delivers and applies fertilizer. Customers like to buy these services in one deal and at a flat price, Mr. Mangum says.

Bay City, Texas Dealer Sells, Delivers, Applies Fertilizer In One-Cost Package Deal

By RUEL McDANIEL
Croplife Special Writer

Texas Farm Supply, Bay City, Texas, has built up a good fertilizer volume since 1952, largely by providing and pushing its "package deal" for fertilizer customers.

The "package" covers the cost of fertilizer, delivery to the farm and applying it, all in one flat price. Customers like it for at least two reasons, according to John J. Mangum, manager.

In the first place, they can buy all three services in one package cheaper than they can obtain the fertilizer, delivery and application if bought separately. Second, there is complete coordination between delivery and application under the Mangum plan; and third, fertilizer is insured until it is applied when delivered in Texas Farm Supply trucks.

This major selling program evolved naturally out of the birth of the fertilizer business itself. When Mr. Mangum came home from World War II, he opened an aviation school at Bay City to train veterans under the GI training program.

To give some of his students jobs after they completed their training, he started a crop-dusting service. That prospered and out of it evolved the fertilizer business, in 1952. Today, it is one of the most dominant fertilizer dealerships along the entire Texas Gulf Coast.

Mr. Mangum has utilized his airplane dusting service for applying fertilizers to advantage in building fertilizer volume, because he finds that farmers not only like the "package deal" program but they like to have the man who sells the fertilizer apply it as well.

In calling on prospects, he stresses the complete service and finds that it is the dominant factor in selling a new customer.

"The combined services impress a prospect with our ability to render a reliable service, it creates the impression that we are a substantial operation and he likes the idea of one outfit doing the entire job," Mr. Mangum says.

He operates five airplanes for dusting, which include not only applying fertilizer but spraying crops against insects as well.

A minor feature tied in with the application of fertilizers by airplane is a mixing device rigged up on a truck, whereby two formulas may be mixed and augured into the airplane hopper instead of the usual single formula. This not only provides ideal mixing but saves considerable time, and cost, through the mechanical mixing from truck to airplane.

Major customers of Texas Farm Supply are rice and cotton farmers, and the package deal was formulated particularly for these two types of customers, Mr. Mangum points out. Some of the same customers do some pasture fertilizing, but it is a minor business source.

Recognizing a growing interest in liquid fertilizers, the company has completed its own plant for mixing and storing liquid commodities.

"Liquids will not materially hurt the dry fertilizer business, according to our way of seeing it," Mr. Mangum says, "but rather they will supplement our present dry business and add materially to our overall volume."

The plant has a daily capacity of 150 tons, operated on a 24-hour basis.

(Continued on page 17)

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Fertilization and weed and insect control are among the major critical factors which have led to an increase in yields per acre by approximately 40% in the past 20 years in the southeastern U.S., says George H. King, Athens, director of the Georgia experiment stations.

There is assurance that the pattern of the past 20 years is an indication of even brighter years to come, judging from Mr. King's statements. Those who are in the business of marketing fertilizers and other farm chemicals should find in the Southeast's expanding economy a steadily increasing demand for their products.

From 1910 to 1940, the annual use of fertilizer remained static at about four million tons; since 1950, however, the Southeast has used not less than eight million tons annually. The development of organic insecticides has stimulated the use of fertilizers.

Weed control with herbicides is relatively new but is adding its weight to the efficiency of crop production. With the use of herbicides and the development of systemic poisons, it is not beyond the realm of reason to visualize the day when cotton will be "laid by" when it is planted, Mr. King says.

By applying the results of research, southeastern farmers have, since 1935, increased the average yield of cotton from 240 lb. per acre to 466 lb. per acre; the average yield of tobacco from 920 lb. per acre to 1,500 lb. per acre; and the average yield of peanuts from 772 lb. per acre to 1,075 lb. per acre.

The more progressive southeastern farmer of today, with larger holdings and with an appreciation of the products of research, is producing agricultural commodities more efficiently than at any time in his history. And the forward progress has only begun. Mr. King predicts that in 15 years, instead of having 1.5 million farms with an average size of 100 acres, the Southeast will have one million farms with an average size of 150 acres; that sources of cash farm income will remain in approximately the same proportions as at present; that 15 years hence this income will amount to $7.5 billion instead of $4.5 billion at present; and that instead of an average cash farm income of $2,909, the average cash farm income will be $7,500.

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

I like to think of the total community . . . a cross-breeding between the PTA and the Church organizations . . . 4-H club members and Boy and Girl Scouts . . . home demonstration clubs and the civic clubs . . . the extension service and the school board members . . . the community clubs and the chamber of commerce . . . Future Farmers and the health department . . . the city fathers and the country fathers.

If this could happen, it would afford social intercourse, and from it we would derive some of the highest enjoyments of life. Where there is free interchange of sentiments the mind acquires new ideas.

People are the final crop of the land. As our soils improve or perish, so improve or perish the physical, mental and spiritual abili-

(Continued on page 20)

WHAT'S HAPPENING TO SOUTHEAST AGRICULTURE?

Farm Changes Boost Value of Management Skill

ATLANTA—The farm economy in the Southeast is changing rapidly, states the farm bulletin of the Federal Reserve Bank of Atlanta.

Some markets are growing; others are shrinking. Farmers are producing more, yet they work fewer hours. Skill and foresight in management will bring greater premiums than ever before, says the bank's bulletin. Sizable adjustments must be made by many farmers to stay abreast of developments.

Many farmers are leaving their farms and taking up other work in the Southeast. Many of those remaining on farms are doing more business. They farm more acres, obtain larger gross revenues, keep more workers fully employed, use more equipment and invest more in current production. The Atlanta bank's bulletin presents the changing situation as follows:

Changes in Number, Size of Farms

One of the clearest and most significant trends in our modern agriculture is the sharp decline in the number of farms. Within only five years the number of farms in the U.S. shrank 11%; in the same period the number in Sixth District (southeastern) states shrank 13%. The only district state registering an increase between 1950 and 1954 was Florida, where the number rose 1%. The number of farms declined 17% in Georgia and 16% in Alabama. Declines of roughly 12% occurred in Mississippi, Tennessee and Louisiana.

Although the number of farms in the Sixth District was reduced between 1950 and 1954, the total number of acres in farms remained the same or declined only slightly. Florida again was the one exception, as land in farms there increased somewhat. With the number of farms reduced and the land in farms holding steady, the number of acres per farm increased. In the five-year period the average size increased by 12%. In

(Continued on page 18)

What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6528—Tractor-Shovel Attachment

The Frank G. Hough Co., subsidiary of the International Harvester Co., announces that the entire line of four-wheel drive "Payloader" tractor-

shovels will offer "Drott 4-in-1" buckets as optional equipment. The identification "4-in-1" implies that the attachment can be used as shovel, clamshell, scraper or bulldozer, according to the company's announcement. Additional information may be obtained by checking No. 6528 on the coupon. Clip and mail it to Croplife.

No. 6527—Fertilizer Additive

A product called "FN-513," recommended as a fertilizer additive, has been announced by the agricultural division of the Ferro Corp. It should be mixed with fertilizer in quantities ranging from 30 to 50 lb. per ton, depending on the prevailing rates of fertilizer application. The product "maintains the fundamental slow-soluble safety principle of FTE" (fritted trace elements), according to the company's announcement. It contains 2.8% boron and 4.8% manganese. Secure complete details by checking No. 6527 and mailing the coupon.

No. 6531—Monthly Bulletin

The Gates Rubber Co. has a monthly publication, Tank Talk, which is available without charge to those interested. The bulletin contains information about fertilizer solution storage. To secure the bulletin monthly check No. 6531 on the coupon and mail it to Croplife.

No. 6530—Portable Steel Bin

A new portable steel bin for storage and shipment of granular or powdered materials has been announced jointly by the Delta Tank Manufacturing Co., Inc., and the chemicals divisions of the Food Machinery & Chemical Corp. The multi-purpose weatherproof bin is trade-named the "Deltainer" by the Delta firm and forms the basis of Food Machinery & Chemical Corporation's "Uni-Hopper" system for shipping. "When shipped

by truck or on specially designed freight cars, the bins are considered part of the carrying vehicle and thus qualified for transportation without freight charges on the bins," according to spokesmen for the companies. Each container is removable for loading and unloading purposes. Three sizes of containers—36, 65 and 88 cu. ft. capacities—are being built. Units may be stacked atop each other; 28 units will fit two abreast on special railroad cars and 10 will go aboard the average truck trailer bed, the announcement states. Two inverting machines have been designed to permit dumping by one operator. The units can be hermetically sealed so that many hygroscopic, hazardous or toxic materials may be shipped with safety, states the announcement. Secure complete details by checking No. 6530 on the coupon and mailing it to this publication.

No. 6529—Soil Fumigant

New literature has been prepared by the Stauffer Chemical Co. about its soil fumigant, trade-named, "Vapam." The product will control perennial and annual broadleaf weeds and grasses including germinating seeds, soil fungi causing seed rot, damping-off and wilt, nematodes that attack plants and soil inhabiting insects, according to the literature. The literature has sections devoted to a description of the product, where it can be used, rate of application, how to use it, special problems in usage and safety precautions. Secure the literature by checking No. 6529 on the coupon and mailing it to Croplife.

No. 6525—Soil Product

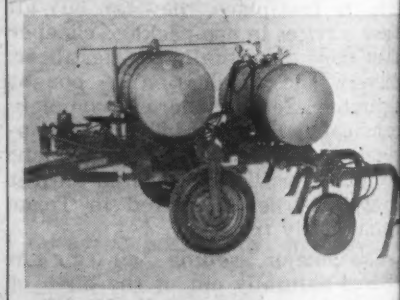
The Smith-Douglass Co., Inc., is producing a product trade-named Nutro Soil Corrector. Company officials say that the product is "a combination of plant food elements with neutralizing qualities for sour and mineral deficient soils" and is intended for home and garden use. "An increasing tendency toward sour and mineral deficient soils prompted research which developed the new product," company officials said. Secure complete details by checking No. 6525 on the coupon. Clip and mail it to Croplife.

No. 6526—Nematode Chart

A new nematode chart intended to be used as a quick and handy reference to more than 50 species of nematodes, their common names and the plants they attack has been prepared by the Shell Chemical Corp. The chart can be used on the wall or underneath the glass top of a desk. Listed on the chart are cyst forming nematodes (cysts cover the eggs), endoparasitic nematodes (those that enter the root tissue or permanently attach themselves to it) and ectoparasitic nematodes (those that feed on the root surface and normally do not enter the root tissue). Included also are above-ground feeders. The chart may be secured without charge by checking No. 6526 on the coupon and mailing it to Croplife.

No. 6521—Liquid Fertilizing Machine

A new liquid fertilizing machine which permits the simultaneous subsurface application of anhydrous ammonia and other liquid fertilizers such as phosphates or complete solutions has been developed by the Dempster Mill Mfg. Co. The applicator, named the Dual LiquiJector, consists of the Dempster No. 500 3-point hitch hydraulic lift carrier whereby a solution tank with metering pump is mounted on the No. 500 carrier and the 150-gal. anhydrous ammonia tank with a flow valve control is mounted to the square bar. This permits the distribution of both solution and anhydrous ammonia to be deposited under the soil in one operation. Different types of the company's



liquid solution pumps and tanks can be furnished for handling either corrosive or non-corrosive materials. Principal advantages claimed for the applicator are the time and labor savings resulting from the simultaneous application and the even distribution at one time of the two types of liquid fertilizers. By using this machine additional NH_3 can be injected into the soil to supplement the nitrogen content with any of the other liquid fertilizers and nitrogen-free solutions can be used to advantage in the second unit, company officials claim. Secure details by checking No. 6521 on the coupon and mailing it.

No. 5615—Seed Protectants

Two seed protectants for slurry application are now available from Panogen, Inc. They are trade named Panoram D-31 and Panoram 75 and are said to possess excellent suspension qualities. Panoram D-31 is a combination insecticide - fungicide and is recommended as a seed treatment for corn, soybeans, sorghum, beans and peas. Active ingredients are thiram and dieldrin. Thiram protects against various seed and soil borne diseases, while dieldrin protects seeds and seedlings from injury by wireworms, seed corn ma

Send me information on the items marked:

- ☐ No. 5615—Seed Protectants
- ☐ No. 5619—Sack Cleaner
- ☐ No. 5622—Belt Feeder
- ☐ No. 5624—Conveyor
- ☐ No. 6521—Liquid Machine
- ☐ No. 6522—Wall Chart
- ☐ No. 6523—Compost Grinder
- ☐ No. 6524—Pyrethrum Booklet
- ☐ No. 6525—Soil Product
- ☐ No. 6526—Nematode Chart
- ☐ No. 6527—Additive
- ☐ No. 6528—Attachment
- ☐ No. 6529—Soil Fumigant
- ☐ No. 6530—Steel Bin
- ☐ No. 6531—Monthly Bulletin

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COMPANY .....

ADDRESS .....

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Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

ots and other destructive soil-dwell-
ng insects. Panoram 75 is a seed
isinfectant for treating corn, rice,
orghums, soybeans, grasses, legumes
nd vegetables. Active ingredient is
hiram. The manufacturer says Pan-
am 75 can be expected to increase
tands and improve yields by pro-
ecting from seed and soil-borne dis-
ases causing seed decay, damping-
ff, seedling blight and root rot. Se-
ure more complete details by check-
g No. 5615 on the coupon and mail-
g it to this publication.

No. 5624—Conveyor

The Burrows Equipment Co. has
eveloped a conveyor, called by the
rade name, Cost Cutter, for the
eed and fertilizer trade. The con-
eyor has either aluminum, steel or
tainless steel frame and is avail-
ble in 8-18 in. belt widths and
engths of 4-40 ft. One of the 22

tandard undercarriages can meet
ny special application, it is claimed.
he streamlined light weight unit
as no sharp corners and features a
irect chain drive from gear motor
o sprocket which eliminates the use
f V-belts and countershafts, it is
nnounced. To secure a 4-page book-
t and complete information check
o. 5624 on the coupon, clip and
ail it.

No. 5619—Sack Cleaner

Bulletin 157-A is a new publica-
on released by Sprout, Waldron &
o., Inc., which gives the details on
s line of sack cleaners. All of the
nits of these sack handling systems
re steel constructed and are such
hat installation can be made to
it any available space or individual
references. The cleaning cage of each
ack cleaner can be located in any
orner of a building, warehouse or
utside on a loading platform with
he fan and collector placed over-
ead nearby or at some remote point
safety cage or basket is provided
n each of these units to prevent
acks from entering the system. The
ulletin will be sent if you will check
o. 5619 on the coupon and mail it
this publication.

No. 6524—Pyrethrum Booklet

African Pyrethrum Development,
nc., has prepared a booklet entitled
Pyrethrum Facts for 1957" and de-
cribes it as the "authorized and au-
horitative wrap-up of pyrethrum
overing the current crop year. "The
ooklet includes such information as:
pplications, development, formula-
ons in which it is used as a base,
roduction and sales figures and the
roduction outlook. The booklet is
vailable without charge. Check No
524 on the coupon and mail it to
roplife.

No. 6523—Compost Grinder

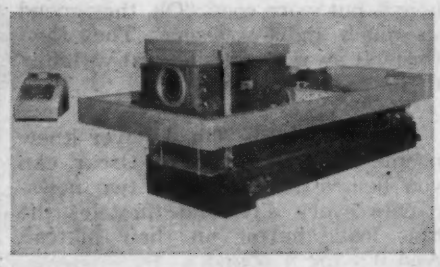
Literature concerning the use of a
ompost grinding machine for garden
small farm use has been prepared
y the W-W Grinder Corp. The ma-
ine, which is available for market-
g through retail dealers, mills and
reens both green and dry materials,
reaking them into tiny quarter size
ieces. Its screen also sorts out rocks
nd other undesirable material from
e raw compost. Compost grinding screens come in various sizes. The most practical for home use is said to be a portable 2-X model, equipped with a 2½ h.p. retrievable starter engine. The larger 4-EV model is suitable for commercial use, and comes with a detachable elevator, so that either the grinder or the elevator can be used independently of the other. Models come equipped with either a gasoline engine or electric motor. Check No. 6523 on the coupon and mail it to Croplife to secure complete details.

No. 6522—Wall Chart

Up-to-date instructions for the safe unloading and handling of sulphuric acid are presented on a new 17 by 22-in. wall chart available through the industrial chemicals division of the Olin Mathieson Chemical Corp. The chart is printed in red and black on special moisture-resistant paper in easy-to-read form, according to company officials. It describes step by step the proper methods for pump unloading and air unloading of tank cars, with special attention to cold weather procedure. Diagrams of piping arrangements are shown for both methods, as well as a list of safety "do's" and "don't's." The chart also includes instructions for preparation of tank cars for the return trip to the manufacturer. To secure the wall chart check No. 6522 on the coupon and mail it to Croplife.

No. 5622—Weighing Belt Feeder

The Thayer Scale & Engineering Corp. has developed a new continuous weighing belt feeder for the basic material processing industries. Based on the patented Thayer leverage system, which has no knife-edge pivots, the unit is claimed to have outstanding accuracy and performance characteristics. Knife-edge pivots have been eliminated. The continuous weighing feeder has been designated as model 1200C and can be



furnished for handling materials such as rock salt, phosphate rock dust, ammonium nitrate and other fertilizers, grains, flours and any other material which may have flow characteristics varying from free-flowing to sticky. The unit can be furnished in various sizes for handling production rates from hundreds of pounds per hour to hundreds of tons per hour. A weight totalizer is furnished with the unit and a rate indicating dial is furnished in the face of the scale. This dial indicates the exact rate of feed through the unit at any given instant. Chart recorders for mounting on the scale or for remote mounting can be furnished to indicate the rate of material weighed and the accumulative weight handled at any period of the day. A load-out counter can be furnished so that the feeder can be set for any given tonnage and when that tonnage has been weighed through the feeder, the feeder will automatically stop and an electrical signal will indicate that the total desired load has been weighed. An adding machine can be furnished with the unit. Secure more complete details by checking No. 5622 on the coupon and mailing it.

MONSANTO APPOINTMENT

ST. LOUIS — David G. Comerford, chief accountant for Monsanto's central research department at Dayton, Ohio, has been appointed chief accountant for the company's research and engineering division, Irving C. Smith, controller, has announced.

The Bulletin Board

LATEST INDEPENDENT SURVEY SHOWS

More Fertilizer Mixers Prefer Spencer "Mr. N" Than Any Other Brand Of Ammonium Nitrate

The South's leading fertilizer manufacturers help take the guesswork out of deciding which Ammonium Nitrate to stock:

In a recent independent survey, 241 leading fertilizer manufacturers were asked this question: "Which brand of Ammonium Nitrate do you prefer?"

Results of the survey showed that Spencer "Mr. N" Ammonium Nitrate is the outstanding favorite of the men who know fertilizer best—the South's own fertilizer manufacturers!

In fact, among manufacturers listing a single preference, "Mr. N" got more votes than the next two highest ranking brands combined — and the questionnaire listed all nine leading brands of Ammonium Nitrate sold here in the South.

What Does This Mean to You?

Because the results of this survey help farmers take the guesswork out of fertilizer buying, more and more of them will be coming to you for Spencer "Mr. N." And Spencer is going to tell practically **every farmer in your area** about the survey, in leading farm magazines and on the top farm-radio shows:

In February, there will be full-page advertisements in **The Progressive Farmer** and **Farm and Ranch** magazines—ads that tell the story of the independent survey that named Spencer "Mr. N" the South's top brand.

In March, there will be **more** advertisements that will keep on building preference for Spencer "Mr. N." But that's not all!

During the peak of the fertilizer selling season, leading farm-radio directors throughout the South will be giving "Mr. N" their personal endorsement! Yes, starting January 14, farm-radio shows will be helping Southern dealers sell Spencer "Mr. N" over all these stations:

WBT.....Charlotte, N.C.
WSM.....Nashville, Tenn.
WSB.....Atlanta, Ga.
WHAS.....Louisville, Ky.
WBAM.....Montgomery, Ala.
KALB.....Alexandria, La.
WMC.....Memphis, Tenn.
WAPI.....Birmingham, Ala.

And don't forget that thousands of Southern farmers are already sold on Spencer "Mr. N"—and the results they get show why:

For example, Anthony Bittel of Owensboro, Kentucky, was averaging 60 to 70 bushels of corn per acre. But with the help of Spencer "Mr. N", his yield nearly doubled, averaging 100 bushels per acre.

Then there's Buck and Bill Royster of Five Points, Alabama, who tested two identical 7½ acre tracts in their cotton field. They put down $4.54 worth of nitrate of soda per acre on one, and $6.04 worth of Spencer "Mr. N" on the other. The 7½ acres of soda cotton yielded six bales. But the "Mr. N" cotton yielded ten bales!

Those are the kind of results that build demand for "Mr. N"—and Spencer is going to use lots of result stories like these in their 1957 advertising!

Combine this with the survey advertisements and you can see why so many dealers are going to feature Spencer "Mr. N" this year!

Remember, **right now** is the time to get ready for the extra sales and extra profits Spencer will be sending your way. So stock up on the brand of Ammonium Nitrate that's preferred by farmers and fertilizer experts—the brand that **helps** you sell with the biggest magazine and farm-radio advertising campaign in company history: Spencer "Mr. N" Ammonium Nitrate Fertilizer!

To Fertilizer Dealers ONLY

SPENCER CHEMICAL COMPANY
609 Dwight Building
Kansas City 5, Missouri
Gentlemen: I am a fertilizer dealer not presently receiving **Today's Fertilizer Dealer magazine.** Please send me a free subscription without obligation.
Name.....
Firm.....
Post Office.....State.....

Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

When Oscar Schoenfeld came home that January evening about six o'clock, he noticed that his home was dark, and he looked puzzled. Then he realized that Minnie, his wife, was gone on a five day visit to his cousin Louis Schiedermayer's home in Little Germania, forty miles away. Schiedermayer, a balding man of about fifty, owned a small shoe store in Little Germania. He and his family of wife and four teen agers descended upon Minnie and Oscar many Sundays in summer and expected meals.

And now, after repeated urgings, Minnie had gone to visit them.

Oscar was lonely without Minnie. It was the first time since their marriage that she had stayed away more than one night. He let himself into the house and shivered, it was so cold.

Then he went into the basement, shook up the small fire, and put on a stick of wood and fresh coal. Back in the kitchen, with his overcoat still on, he measured out coffee water for two cups and turned on the gas stove.

"Ach, it is lonesome without Minnie this week," Oscar said aloud, "but we will save lots of coal. I keep only two rooms open. It helps save when I shut off the other rooms. And Minnie will get free meals for five days."

After fifteen minutes the heat from the fresh coal fire came up fast and Oscar shut off the furnace. Then he looked into the fifteen-year-old refrigerator. Each time it ran there was a peculiar whining noise.

"Hm," said Oscar, inspecting the shelves. Minnie had roasted some beef and ham before she went away. Oscar knew enough to slice some roast beef one night and make a sandwich of it and also eat an apple.

Then the next night he would have a ham sandwich and an apple. Noons he made himself a sausage sandwich and drank milk. For breakfast, there was an orange and warmed over oat meal and powdered coffee.

Oscar didn't like the fare very much, and once in a while he was almost on the point of going downtown to eat at the cheap Slide Inn Restaurant, but at the thought of spending 90¢ for a plate lunch, he gave it up. After all, Minnie would be home in two days.

The hot coffee warmed Oscar's spirits a little, and he sat munching his sandwich. There was a certain satisfaction, he thought, in going without, so that one could have all his bills paid and money in the bank —quite a bit of money, drawing interest year after year. If all people would do like Minnie and him, Oscar thought, everybody would be lots happier. Once an old German had told Oscar, "Remember, Oscar, money, she is always in style," and he had never forgotten that.

Now he turned on his television set. It was a 12 inch screen and he had had it three years. It was second hand when he bought it, and he never kept it on more than one half hour, because he wanted the picture tube to last.

It was a cowboy picture that was Oscar's favorite. But there was one thing that displeased him. The cowboys and outlaws always did so much shooting. It hurt Oscar to think how much all those bullets cost. An awful waste of money.

Then came a knock on the front door. Oscar frowned, and listened. No one ever called on Minnie and him at night. Or was this just the wind rattling the storm door. The knock came again, rapidly, and was repeated.

"Ah, what is that?" Oscar said grumpily. He got up, shut off the television set and went to the front door. He snapped on the porch light, peered through the glass. Minnie's cold, frightened face looked back at him.

Quickly he opened the door, and Minnie, clad in her mother's discarded fifteen year old fur coat, came in. She flung her arms around Oscar and the piercing smell of moth balls which Minnie always kept in her coat pockets in summer, assailed him.

"Oh, Oscar," she sobbed. "I am so glad to be back."

"B—but you were going to stay until Friday!"

Minnie walked into the lighted dining room and stood with her cold back against the wall, letting the hot air from the register seep around her legs. She did not take off her coat.

"Oh, it was awful, Oscar. Just awful. I couldn't stand it."

"Why not?"

Minnie now began to take off her heavy, but worn coat. "Oh, they spend so much money, Oscar. They just throw it away. I got sick just watchin' them."

"Ya?"

Minnie nodded. "Oh, I never knew people could be so foolish. Oscar, can you believe it, they take two newspapers every day, and they let the kids leave butter on their plates? And it's 75¢ a pound."

"Huh," Oscar said. "They will be sorry someday."

"And they throw dry bread to the birds instead of grinding it up and using it for bread pudding. Every day, Oscar!"

"No!" Oscar said shocked. "They are as bad as McGillicuddy. And Schiedermayer is a German, too. What has got into him?"

Minnie shook her head. "I don't know," she said sadly. "Then they never shut off any of the rooms in their house, no matter if nobody is in them. They leave lights on all over and, Oscar, they do not believe in warmed over meals. What do you think of that?"

"No?" Oscar was shocked again. "What's the matter with warmed over meals?"

Minnie's lips pinched tight and her eyes narrowed. "If there is any meat left over from a meal, she throws it out to the dogs. The vitamins are gone, she says, and the minerals. Warmed over food is kapoot. It is good for nothing."

"Poor Schiedermayer!" Oscar shook his head sadly. "No wonder he is always complaining he can't save money."

"And the kids," Minnie went on, "they buy ice cream and candy bars every day and they are always kicking they haven't enough clothes or records or something. And I never seen them do a tap of work. Mrs. Wischer, a widow, comes in once a day and cleans up. Oscar, what is the matter with people today? Are we the only ones who save, who won't have to go to the poorhouse someday?"

"I don't know," Oscar said thoughtfully. "Schiedermayer and McGillicuddy, they are a pair. And who would think it?" Then his eyes narrowed. "Minnie, but it cost us plenty to have you come home. The bus fare is $2.43 to Germania and you skipped out on two days free meals from Louis' place."

For a moment Minnie looked scared, then she said slowly:

"Yes, I missed the two days free meals, Oscar, but I got a free ride home."

"How?"

"I remembered there was a fertilizer dealer in Little Germania and I telephoned him. He has heard about you, he said. I asked for a ride when he was making an appliance delivery over this way and so he picked me up. I saved $2.43, Oscar. Isn't that smart of me?"

Oscar grinned a little. "By, golly, Minnie, you know how to do it. You do not forget what I tell you. If only that dumbkopf McGillicuddy could save like you do. Ach, then it would be a pleasure to be in business."

Gates Rubber Lined Tanks provide

. . . complete corrosion protection at low cost

. . . maximum flexibility in new plant design

Whether you are handling high or low pressure nitrogen solutions, balanced fertilizers or phosphoric acids, Gates Rubber Lined Tanks afford *complete* protection for storage.

Offered *only* in Gates "50H" Rubber Lined Tanks, this complete protection permits maximum flexibility in the planning of fertilizer mixing and distribution plants.

Gates Rubber Lined Tanks will handle *all* fertilizer chemicals—those being planned for the future as well as those now in use. For this reason proposed changes in plant design or in types of chemicals to be handled need no longer pose knotty problems.

For complete information on these cost-saving rubber lined tanks, call your nearby Gates representative. The Gates Rubber Company, Sales Division, Inc., Sioux City, Iowa —Denver, Colorado.

Helpful Bulletin Yours Free

To receive monthly copies of TANK TALK, the informative bulletin about fertilizer solution storage, send your name and address to TANK TALK, The Gates Rubber Company Sales Division, Inc., 999 So. Broadway, Denver 17, Colo.

Gates
The Mark of Specialized Research

Gates Rubber Lined Tanks
FOR INDUSTRY AND AGRICULTURE

TPA 181

RINGING THE CASH REGISTER

High Producers

Many tobacco farmers in Wake County, North Carolina, produce as much as 3,000 lb. of tobacco per acre, about double the average yield. S. N. Carroll, manager of the Robertson Fertilizer Co., Raleigh, N.C., which is in Wake County, says that the high producers are as far ahead of state recommendations as most of the growers in other sections of North Carolina are behind. Continuing education of the farmer is necessary to convince him that the proper use of adequate quantities of fertilizer is necessary to produce better-than-average yields.

Everyone's A Salesman

Salesmanship is the key to economic progress and nothing happens until something is sold, states Ralph Everett, Empire Sales Training Center, Buffalo. Everyone is a salesman in one form or another. You may not carry the label of salesman but you can bet your life that sometime, somewhere, you'll have to sell something. The more you have mastered the simple fundamentals of selling by practice, the more successful your business will become.

Traffic Changes

Dealers and plant owners contemplating moving to a new location or rebuilding are advised to appraise any new locations with an eye to the new 41,000-mile federal interstate highways proposal. If built according to plans, the proposed system will link principal cities in the country with a network of divided highways, offering uninterrupted driving for motorists. There will be shifts in population to new suburban areas outside cities. In addition, there will be changes in traffic patterns which will affect the location of suburban stores and plants. Entrance and exit points along the new highways may become most desirable locations for traffic to reach.

LOW-COST KEY TO SOIL PRODUCTIVITY

The American Potash & Chemical Corporation, Duval Sulphur & Potash Company, Potash Company of America, Southwest Potash Corporation, and United States Potash Company Division of United States Borax & Chemical Corporation, comprise the membership of the American Potash Institute, Inc. Through their Institute, these firms conduct a continuing program of research and education, directed toward the more efficient use of fertilizers.

As a contribution to that program, the regionalized advertising message on the following two pages will appear as a part of the Institute's 1957 informational campaign in Farm Journal, Successful Farming, Farm and Ranch, Progressive Farmer and Capper's Farmer. Enlargements, for wall hanging, will also go to each vocational agriculture department, each county agent, and each university soils and agronomy office in the United States. Other educational messages will appear in some 50 farm magazines early in the fall of 1957.

Wall-poster-size enlargements of these messages, regionalized for the South, the Midwest, the West, and the Northeast, are available for tacking up. For how to obtain them, and how to use these and other American Potash Institute materials, see page four, of this insert.

WITH POTASH

LOW POTASH

poor quality tobacco

fired edges

alfalfa and clover: white spots early, fired edges later

grasses: fired edges and tips

chaffy ears

fired edges

vegetables lack quality

LOW POTASH

small knotty bolls

fired edges

WITH POTASH

WHY-WHEN-HOW you should use

POTASH

Low-cost key to productivity in Southern soils

WHY use potash? Very simple: *it pays.*

Potash is the low-cost key which opens the door to highest soil productivity. Potash puts yield and quality in corn and forages. It takes you to the gin with not only more, but *higher grade* cotton. Potash makes *all* crops yield better, look better, use moisture better—even fight off disease better.

With *severely limited* supplies of potash, plants will live, but develop many of the starvation symptoms shown in the left-hand sides of the illustrations on the opposite page. With *moderately limited* amounts of potash in your soil, you won't see these warning signs, will never know the profit you *could have* realized. If you are following a typical Southern cropping pattern and fertilizing program, *you are running lower and lower on potash.* Without delay, collect soil samples, have them tested. Potash is low in cost; it will pay you to put on *every pound* the soil tests indicate you need.

In short, potash—the *lowest-cost* of the major fertilizer elements—contributes to *highest profits.* Not only through greater yields, but also through products of *higher quality,* better market appeal.

WHEN is the best time to use potash? There are several good times. Just before or at time of planting. Or as a topdressing or sidedressing. Or as broadcast applications to build up the level of soils low in potash.

But remember this: Southern crops—corn, cotton, small grains, forages, tobacco and truck crops—all need large amounts of potash. Whenever you market a crop, you have sold potash off your farm—and need to replace it, just as surely as you need to fill the gas tank after a day of heavy plowing.

The single most important point to remember about *when* to apply potash is to apply it *before* a single hunger sign can be seen. When hunger signs show, all you can hope to do is *cut your losses.* Apply potash early and amply, and *build your profits.*

HOW to apply potash? Apply potash in mixed fertilizer *in the row* for crops like corn, cotton, or tobacco. With modern equipment, band applications can be made at or just before planting. For best results, place it about 2″ below and 2″ to one side of seed.

Sometimes, because soils are sandy or for other reasons, it is desirable to split potash applications. In such cases, part of the potash can be applied later as a sidedressing. For pastures or hay crops, high-potash mixed fertilizers can be broadcast or drilled. Alfalfa generally requires annual topdressings with an 0-9-27, or similar analysis.

Southern crops all require potash. Heed your soil test results and apply potash where needed—you'll be glad you did.

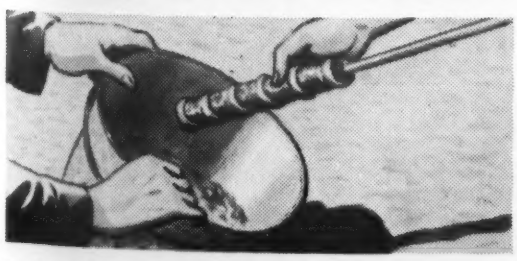
WRITE FOR FREE BOOKLET:
"Potash In Agriculture"

K_2O AMERICAN POTASH INSTITUTE, INC.

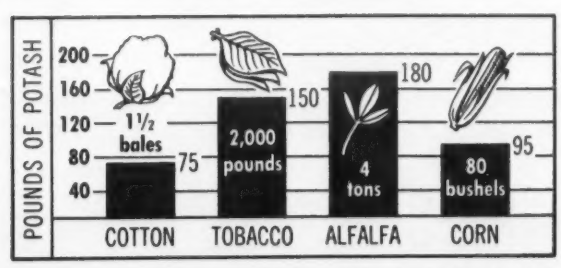
Dept. 153, 1102 Sixteenth Street, N.W., Washington 6, D.C.

MEMBER COMPANIES: American Potash & Chemical Corporation • Duval Sulphur & Potash Company • Potash Company of America • Southwest Potash Corporation • United States Potash Company Division of United States Borax & Chemical Corporation

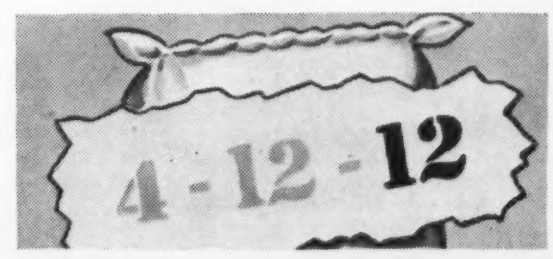
2-Minute Short-Course on How to *Buy* Potash . . .



Don't wait for hunger signs. Test soil, apply needed potash. Consult your official agricultural advisor.



Southern crops use lots of potash. And, the better your yield, the more potash next year's crops need.

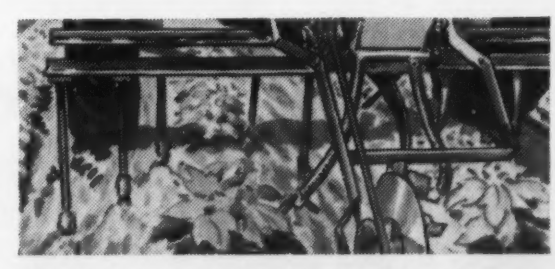


Potash is the "anchor man" in a fertilizer analysis—just as it is in building quality and yield in crops.

And How to *Apply* Potash . . .

In the South, band applications at or just before planting are recommended to replace bedding on.

For top Southern pastures, use plenty of potash when starting, and topdress to maintain yield.



On cotton, corn and tobacco, sidedressing with potash can increase yields and boost the quality.

PROGRAMS and ACTIVITIES
of
THE AMERICAN POTASH INSTITUTE, INC.

The American Potash Institute is a research and educational organization. Its purpose is to expand the agricultural use of potash on a basis that is sound and profitable to the farmer.

Organized in 1935, the Institute engages in a wide range of activities, and offers many services to farmers and agricultural leaders. These activities and services include: fellowships and research grants in agricultural colleges and experiment stations; fertilizer demonstrations, in cooperation with agricultural extension forces, soil conservation service, county agents, vocational agriculture teachers, and other groups; education in efficient use of potash, through publications, motion pictures, radio, television, books, and advertising. The Institute's monthly magazine, "Better Crops With Plant Food," goes regularly to 24,000 teachers, county agents and other agricultural leaders. Regional newsletters, reprints, and direct service to the farm press also constantly help explain the importance of potash in balanced soil fertility.

Partial Listing of Educational Materials Available from the American Potash Institute

J. Fielding Reed
Southern Manager
Mortgage Guarantee Bldg.
Atlanta 3, Georgia

- **Motion Pictures** (16 mm., color)
  - —Potash Production in America (25 minutes)
  - —The Plant Speaks (series of 4 films)
    - . . . Thru Deficiency Symptoms (25 minutes)
    - . . . Soil Tests Tell Us Why (10 minutes)
    - . . . Thru Tissue Tests (14 minutes)
    - . . . Thru Leaf Analysis (18 minutes)
- **Better Crops With Plant Food**
  - —Monthly magazine on soil and crop management.
- **Slide Sets and Film Strips**
  - —Successful Alfalfa—You Can Grow It
  - —Soil Fertility and Soybeans
  - —Potash Deficiency Symptoms
  - —Potash Production in America
- **Wall Posters**
  - —Plant Food Utilization
  - —Potash-Starved Legumes
  - —Corn Starvation Symptoms
  - —Cotton Rust Is Potash Hunger
- **Pamphlets**
  - —Potash Deficiency Symptoms
  - —Potash In Agriculture
- **Reprints of Articles on Soil Fertility**
- **Regional Newsletters**

You are invited to make use of any or all of these materials. In addition, your regional agronomist will be pleased to be of personal assistance. Call on him.

THE AMERICAN POTASH INSTITUTE, INC.

Dept. 153, 1102 Sixteenth Street, N.W., Washington 6, D. C.

K_2O

MEMBER COMPANIES: American Potash & Chemical Corporation • Duval Sulphur & Potash Company • Potash Company of America • Southwest Potash Corporation United States Potash Company Division of United States Borax & Chemical Corporation

FARM SERVICE DATA

Extension Station Reports

Nitrogen fertilizer resulted in large creases in yields of pickling cucumers in tests conducted at the Hope uit and Truck Branch Station of e University of Arkansas, accordg to G. A. Bradley, assistant horticulturist.

These tests indicated that the most onomical practice was to apply part the nitrogen under the row and rt as a sidedressing later in the ason.

An application of nitrogen under e row resulted in excellent early owth and vigor, while later sideessings helped maintain good vine owth as the season progressed.

Highest yields were obtained hen 80 lb. of nitrogen per acre as applied under the row and sideressings of 30 lb. per acre were iven when the vines began to run nd again two weeks later.

This treatment resulted in per acre elds of 1,950 lb. of U.S. No. 1 grade d 26,000 lb. of all marketable ades.

When 80 lb. of nitrogen was applied nder the row, but no sidedressings ere given, yields were 1,800 lb. of o. 1 grade and 23,000 lb. of all maretable grades. In contrast, yields here no nitrogen at all was applied ere 975 lb. No. 1 grade and 8,000 of l marketable grades.

It was evident in this study that oung cucumber plants suffering from nitrogen deficiency can make rapid covery, when they are supplied th nitrogen. Plants supplied with nitrogen before planting, but given idedressings of 30 lb. per acre at the ning stage and again two weeks ter, produced almost as good a yield those receiving 80 lb. of nitrogen nder the row before planting. Yields ere 1,750 lb. of U.S. No. 1 grade and ,000 lb. for all marketable grades. Adequate amounts of phosphorus d potassium were applied in all eatments.

★

O. N. Andrews, Alabama Polychnic Institute extension agronoist, has cautioned Alabama farmers be on the alert for a new parasite, itchweed, which could steal most of e state's 52 million bushel corn op.

Witchweed has not yet been ound in Alabama, but the pest was ound in 40 places in the Carolinas st growing season—its first apearance in Western Hemisphere.

This weed does its damage below e ground. In the Union of South Africa, its native home, the witchweed damages more corn than fungus diseases and insects combined. Witchweeds penetrate the plant's roots, taking all its nutrients and water. Affected plants wilt as if they had suffered a prolonged drouth and usually die within a few weeks.

For about a month after its seed germinates, the weed grows underground. When it emerges through the soil, the weed is a bright green color and seldom gets over eight inches high. A month later it begins to blossom with small flowers, sometimes white or yellow, but usually bright red. Blooms first appear near the base of the weed.

★

"Essentially unchanged" is the label put on the 1957 outlook for vegetable crops in Virginia by agricultural economists at Virginia Polytechnic Institute.

Efficient, well-balanced production should be the goal of vegetable producers in Virginia, the economists say. They advise producers to determine, on the basis of an up-to-date inventory and past experience, the patterns of production that best fit their individual farms. Annual production plans should be changed from this usual pattern when special short-term conditions vary.

★

Calcium is the clue to a mystery that has stumped tomato growers—and whittled their profits—for many years, a University of Florida Gulf Coast Experiment Station worker has discovered.

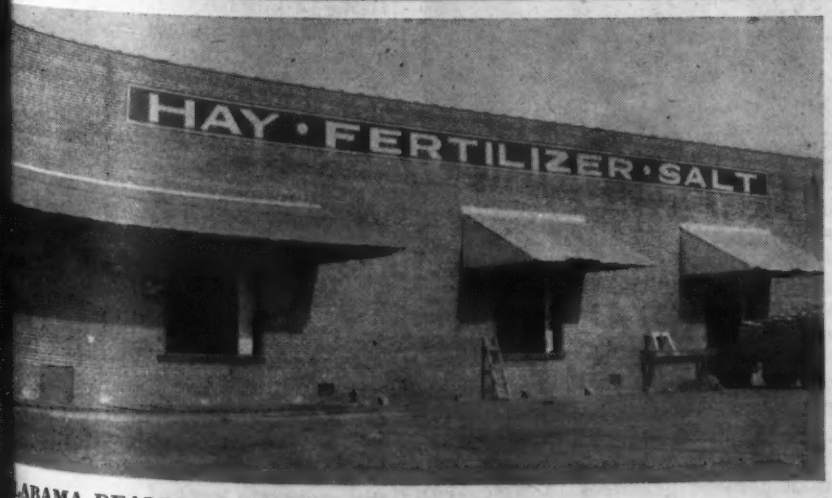
The serious trouble that harries both the home gardener and the commercial tomato grower is blossom-end rot, the scientist, Dr. C. M. Geraldson of Bradenton, says.

This physiological difficulty that often ruins as much as half or three-quarters of a tomato crop can be spotted by the black, dry, sunken areas at the blossom tip of the fruit.

A supply of calcium too low for the growth needs of the tomato is the cause. Moisture is of only second-rate importance in bringing on the disease.

HEADS STATION BOARD

NEW BRUNSWICK, N.J.—A Monmouth County fruit grower, Tunise Denise of Freehold, has been elected president of the board of managers of the New Jersey Agricultural Experiment Station. He succeeds Howard M. Sheppard of Cedarville.



ABAMA DEALER—Loading of fertilizer and other merchandise sold by John A. Lamey Milling Co., Mobile, Ala., is simplified by truck-high deery doors shown in the above picture. The company has delivery service, t it emphasizes advantages offered by customer pickup. The company does annual volume of more than 1,000 tons of fertilizer and sells large quantis of insecticides. John A. Lamey, Jr., is president, and Clifford W. Brady les manager.

TEXAS FARM SUPPLY

(Continued from page 9)

It provides customers with five standard formulas, and it also makes it possible to turn out custom mixes according to a customer's own specifications.

To stimulate the use of liquids, the company has stocked a variety of applicators, which it sells outright or rents to customers; and it also will include the application in the fertilizer sale.

Mr. Mangum has experimented with the use of airplanes for applying the liquid formulas and he feels that this method of application will be practical.

If he finds that this form of application is practical for the fertilizing of the two principal local crops, he will include airplane application into a package sale, on the same basis as he features dry fertilizers, he says.

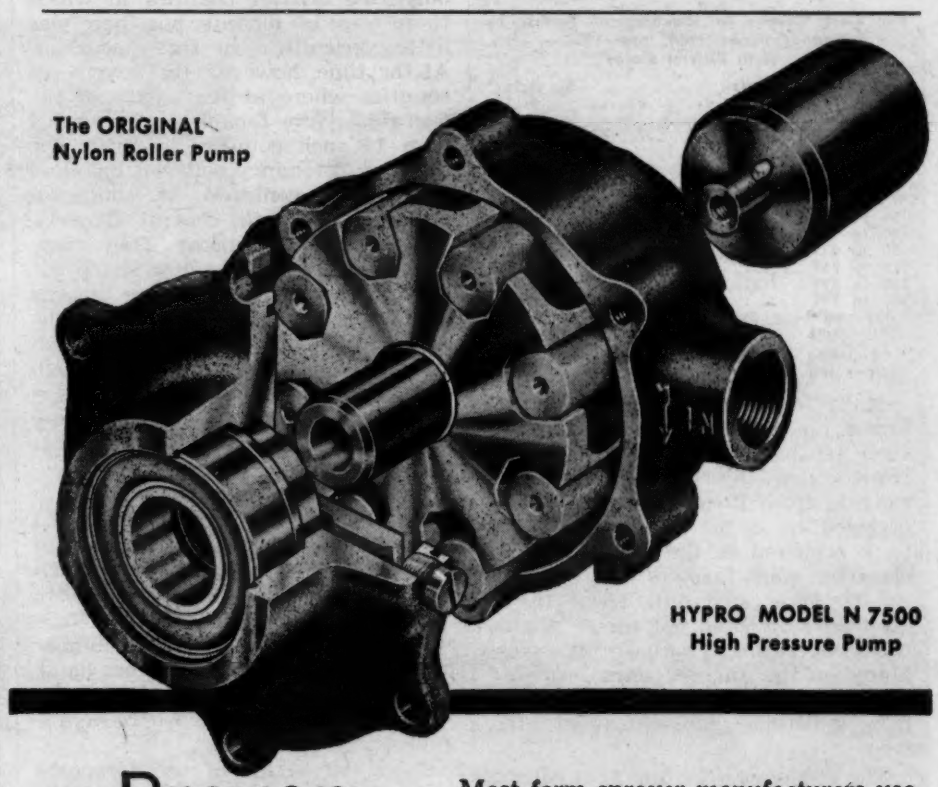
"One reason we believe there is a great future for the dealer formulating and selling liquid fertilizers," Mr. Mangum points out, "is that they represent considerable labor saving over dry fertilizers. Labor is becoming an increasingly important factor in farm operation, and whenever a dealer can show a customer where he can cut his labor costs, he is an eager listener, particularly the large farmer that must depend heavily on 'outside' labor."

ARKANSAS INSPECTION

LITTLE ROCK—The Arkansas Plant Board collected and analyzed 728 samples of pesticides in fiscal 1955-56, compared with 226 in the previous year.

VIRGINIA PASTURE SCHOOL

BLACKSBURG, VA.—The annual Virginia pasture school for dairymen and livestock producers will be held Feb. 26-27 at the Middleburg branch of the Virginia Polytechnic Institute Agricultural Experiment Station.



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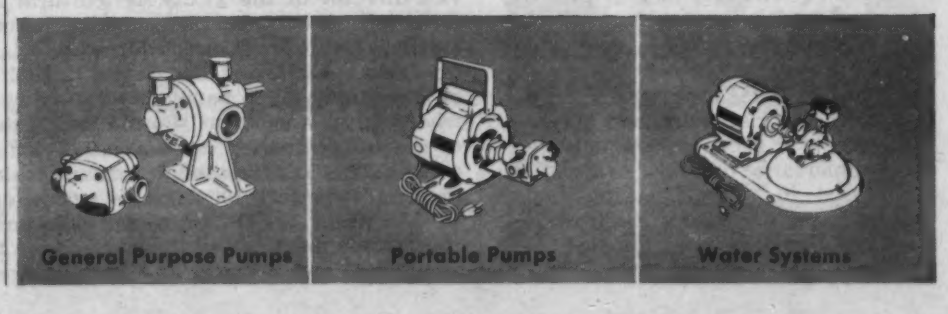

SOUTHEAST FARM CHANGES

(Continued from page 9)

1954, the largest farms in terms of acres were in Florida and Georgia, and the smallest were in Tennessee. Farms in both Florida and Tennessee failed to grow as much in size as those in other district states, particularly Alabama. Many farms in Florida, of course, were already of large acreage in 1950, whereas there was a large number of small farms in Tennessee.

Although there are now fewer farms in district states, the decline in number has not been evenly distributed among the various sizes of farms. Where part-time and residential farms are common, as in Florida and Georgia, the number of small farms—those with less than 10 acres—increased. In Georgia in 1954, for instance, there were 88% more farms of less than three acres than there had been in 1950.

Per Cent Change in Numbers of Farms, by Size of Farm, 1954 from 1950—Sixth District States

Size of farm in acres	Six states*
Under 10	+11
Under 3	+46
3 to 9	+ 7
10 to 29	—18
30 to 49	—24
50 to 69	—22
70 to 99	—16
100 to 139	—13
140 to 179	— 9
180 to 219	— 4
220 to 259	+ 1
260 to 499	+ 4
500 to 999	+12
1,000 and over	+20
All farms	—13

*Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee.

Many full-time farmers with small farms, on the other hand, closed out their businesses. For the Sixth District states the number of farms ranging from 10 to 100 acres in size declined by 20%. The heaviest cut back occurred in the 30- to 70-acre class, but some farmers with as much as 180 acres sold out. These farmers evidently could not compete with those operating larger acreages. Many of the smaller ones probably found that they could earn more from full-time employment off the farm.

The economic pressures that caused some small farmers to sell their land induced others to buy it. In Florida, for instance, the number of farms ranging from 260 to 499 acres in size increased 15%. Other district farmers with still larger acreages, also struggling to gain efficiency and competitive advantage, added even more land to their operations. The number of farms of 1,000 or more acres in district states rose from 9,600 in 1950 to 11,500 in 1954, or 20%. The gain was 40% in Tennessee and 25% in Mississippi.

Types of Farm About Same

Despite these changes in the number and average size of farm between 1950 and 1954 there was little change in the relative importance of the various types of farm. In both years 40% of the farms in Sixth District states were classed as cash grain, cotton, or other field crop farms; 1% were vegetable farms; 3% were dairy farms; 6% were farms producing livestock products other than dairy or poultry; and 41% were miscellaneous or unclassified farms. The number of general farms, however, slipped from 6 to 4% of the total, and the number of fruit and poultry farms rose from 1 to 2% of the total. Taken generally, these data suggest that the comparative advantage among various district crops and district farmers did not change much except in general farming, fruit growing and poultry production.

More marked shifts in some types of farms occurred, however, in individual states. The number of poultry farms in Alabama increased 66%; in Georgia it grew by 46%. The relative importance of poultry farms also increased in those states. Meanwhile in Georgia, farms producing other livestock products grew in number and relative importance. In Florida in 1954, there were 53% more fruit and nut farms than five years earlier, but 26% fewer vegetable farms. The number of cotton farms shrank in all district states except Florida and Mississippi.

Farm Tenancy Reduced

As farming becomes more competitive, farms grow larger and farm businesses become more technical and more mechanized and require fewer tenants. Many tenants, furthermore, find themselves at a disadvantage. Oftentimes they control little capital and are poorly trained. Frequently the most they can offer their employers is some experience in outmoded farming.

By reason of these factors, tenant farming, although still widespread in the district states, is diminishing in importance. True, in 1954 there were only two district counties in which there were no tenants, but there was little agriculture in those counties. At the time, however, there were six counties where at least 66% of the operators were tenants, as compared with 14 such counties in 1950. The declines in tenancy between 1950 and 1954 were centered in southeast Georgia, in north central Georgia, and in central Alabama. They came about chiefly because of a sharp cut back in the number of share tenants and croppers although there was some decline in the number of cash and share-cash tenants. Although there were fewer croppers in the district in 1954, they held the same relative importance among all tenants as in 1950—45% of the total.

Most of the decline in tenancy in the five-year period was the result of a leaving of agriculture by nonwhite operators. The number of nonwhite operators declined roughly 18% in all district states except Tennessee, where it fell 12%. The number of white operators, on the other hand, declined about 10% in all district states except Florida, where a 4% gain occurred.

As a net result of the foregoing changes in farm tenure, 34% of the farms in the Sixth District states were run by tenants in 1954 and 66% were run by full-time or part-time owners. The ratio in 1950 was 60-40.

Farmers nowadays are doing a larger volume of business than they did five years ago. They not only buy more per farm but they sell more per farm. The number of farmers obtaining $25,000 or more gross income per year rose 42% in the Sixth District states between 1950 and 1954. The number obtaining between $10,000 and $25,000 gross rose 43%. Meanwhile, 26% fewer farm operators obtained less than $2,500 of gross income in 1954 than in 1950. This decline occurred largely in that group obtaining $250 to $2,000 of gross income a year. Nevertheless, two fifths of the farmers in district states are operating farms that bring less than $2,500 in gross farm income each year.

Farmers with gross sales of less than $2,500 a year cannot easily support their families. They are compelled to increase their incomes from farming or seek other sources of income. Some, of course, give up farming, commute to urban jobs, and simply maintain rural residences. Others take up part-time farming. Every county in the Sixth District except Monroe County, Florida, contains some part-time farmers. There were 13% fewer part-time farmers in 1954, however, than in 1950. The largest drop—25%—occurred in Mississippi. Despite the decline, the relative importance of part-time farms in the district was the same in 1954 as in 1950. It was somewhat greater in Alabama, Louisiana and Tennessee, but was less in Georgia and Mississippi.

Workers on Farms—Sixth District States, 1950 and 1954

State	Average number of workers per farm* 1950	1954	% change
Alabama	1.79	2.14	+20
Florida	3.06	2.43	—21
Georgia	1.99	1.98	— 1
Louisiana	1.89	2.90	+53
Mississippi	1.77	2.51	+42
Tennessee	1.67	2.19	+31
Six states	1.87	2.32	+24

*Family and/or hired workers.

Farmers who decide to continue farming meet the need to raise their output and income by buying and farming more land and by using available labor more efficiently. Between 1950 and 1954 the number of family and hired workers per farm increased 24%, from 1.87 workers per farm to 2.32. The largest gains occurred in Louisiana and Mississippi. There was little change in Georgia, but a significant decline in Florida. This shift in the use of labor came about because many farmers realized that to receive larger incomes they must keep more people fully employed at highly productive work. A one-man business would no longer do; a two- or three-man business was required to obtain a gross income of sufficient size.

A two- or three-man business is most productive, however, when there is sufficient working capital—machine power, equipment, quality seed, fuel oil, feed, fertilizer, and so on. Many district farmers have injected such working capital into their businesses, thus raising the productivity of the labor they use. They have bought many tractors and related equipment since 1950, especially in Alabama, Georgia and Mississippi.

With greater mechanization, a more intensive type of farming is possible. Fertilizer, for example, may be applied more heavily and is more effective when farmers can cultivate, spray, dust and so on, promptly and efficiently. Having the proper machinery and tools to do this has helped induce farmers in the district to double their use of fertilizer since 1940. They used 10% more in 1954 than in 1950. District farmers now use about 25% of the fertilizer used in the nation; they put 17% of their tonnage on hay and pasture land, 21% on cotton, 21% on fruits, vegetables, and potatoes and 26% on corn.

Adjustments Must Be Financed

When farmers commercialize their operations as rapidly as they have, they usually run into financial problems. They need additional capital; they must analyze their alternative uses for it; and they must apply appropriate amounts of each kind of capital—current operating, intermediate-term, and long-term—to make their total capital investment profitable. Some district farmers, of course, have enough capital of their own and know how much to use for each purpose. For many district farmers, however, obtaining the needed amounts of capital and knowing how much to use in each place are major problems.

Number, Average Size and Value of Farms, 1954

Place	No. 1954	Aver. size, 1954 acres	% change from 1950	1954 dollar value of land and buildings per acre
Alabama	176,956	118	+19	58.38
Florida	57,543	316	+ 9	112.88
Georgia	165,524	145	+12	61.35
Louisiana	111,127	103	+14	111.16
Mississippi	215,915	96	+16	71.74
Tennessee	203,149	87	+ 9	91.32
Dist. states	930,214	144	+12	84.47
U. S.	4,782,393	242	+13	84.37

Commercial bankers have long been the source of much of the capital and financial advice sought by farmers. In recent times, production credit associations, insurance companies, Federal Land Banks and the Farmers Home Administration also have been important sources of funds and financial guidance. Data on the extent and scope of service these lenders give to agriculture on a regional as well as national level are being collected by various agencies this year. The Farm Credit Administration is obtaining data from its loan portfolios on the characteristics of its borrowers and their loans; the U.S. Department of Agriculture is completing a study of the characteristics of loans made by insurance companies and the Farmers Home Administration; and the Federal Reserve System has completed a survey of farm loans made by commercial banks.

Financing changes in the agricultural plant in the Sixth District is a task with economic implications for the future. For one thing lenders may determine who many of our future farmers will be. By withholding funds from farmers with little ability and inadequate businesses, lenders may cause them to seek other employment; presumably then, farmers with the most ability would continue to farm. Thus lenders can help to upgrade farm management ability in the region and thereby help lift the economic level of agriculture. By financing capable young farmers bankers can help to insure future farm production. Finally, by supplying adequate sums to commercial farmers, bankers help to increase farm productivity and income.

QUANDARY IN IRRIGATION—Evidence that the farmer faces some real problems in irrigation was brought out by this panel among others during the recent Irrigation Short Course at Texas A&M College. As the drouth continues, and more and heavier water applications are needed by growing crops, the quality of water available becomes poorer and poorer, so that eventually the farmer must decide whether his land can stand the extra salt that another irrigation will bring in. Panel moderator, standing, is Dr. R. E. Patterson, vice director of the Texas Agricultural Experiment Station. Panel members, from left, are D. E. Longenecker, assistant agronomist at Sub-Station 17, TAES, Ysleta; M. E. Bloodworth, associate professor, Department of Agronomy, Texas A&M, and Dr. Curtis L. Godfrey, associate professor, Department of Agronomy. This panel, in discussing management practices in irrigation where salt is a problem, showed that if the problem is severe enough, up to 90% of the water applied must be allowed to drain on through the soil to carry away excess salts, although earlier speakers had devoted their efforts to telling approximately 100 farmers and equipment company representatives how to save water. As Dr. Patterson summarized this problem, "The course which the farmer must follow lies somewhere between what we ordinarily think of as efficient use of water and salt management."

lastic Greenhouse peeds Herbicide tudies in Arkansas

FAYETTEVILLE, ARK.—Dr. R. E. rans, assistant agronomist with the niversity of Arkansas' Agricultural xperiment Station, who is conduct- g experiments on the use of herbi- des on field crops, reports that the ork has been speeded up consider- bly since it was expanded in a plastic reenhouse constructed last year.

With the new equipment, field con- tions can be more nearly duplicated ith a great saving in time, space nd money, Dr. Frans says. The reenhouse itself is 36 by 14 feet on 3-foot high cement wall. The upper amework is covered with two layers f polyethylene plastics, one .002 inch nd the other .004 inch thick. A 30-by- 6 foot headhouse provides a com- ination laboratory, potting, and stor- ge room and a separate room for a pray table.

A feature of the greenhouse work the herbicidal spraying table. Es- ential parts include the endless con- eyer belt which carries the plants eneath the stationary spray boom at djustable speeds. The spray boom an be adjusted to different heights s needed. The belt is powered by an lectric motor through a variable- peed hydraulic transmission, and is egulated by a speedometer. At the esired speed, air pressure forces the pray from pressure cans inside a pray chamber through the nozzles of he spray boom.

The greenhouse is one phase of a roject on herbicidal investigations eing conducted at the experiment tation. Thus far most of the work as centered around cotton and soy- eans, although it may be enlarged to ther field crops. Work is also being onducted with perennial noxious eeds such as Johnson grass. Investi- ations are being made of the funda- ental actions of certain herbicides n plants, and of the reaction of cer- ain crop plants to the herbicides.

Dr. Frans said that it might be- come possible to predict the best time to spray in order to get rid of Johnson grass if work on this prob- lem is successful. In working with the grass, experiment station work- ers have sprayed the Johnson grass foliage and then dug up rootstocks at regular time intervals to find any changes in the root's food re- serve which may follow application of the chemical.

One part of the greenhouse study s on the mechanism of the herbicide's ction on crop plants. The experiment tation has begun such investigation f 2,4-D-like compounds and will test ther compounds that may be used or herbicides. The work is designed o see what happens to the herbicide ithin the crop plant, and to try to nd out how the herbicide operates n killing plants. Investigations are lso being made of many new experi- ental weed killers.

The greenhouse has another ad- antage. In can be used in the winter onths when field work would be im- ossible. Much of the field work will e supplemented and hastened by ndings from the greenhouse studies. he new plastic house has been found ery satisfactory in that growth un- er plastic is more nearly like field onditions than is growth under glass. he plastic does not filter out the ltra-violet rays as does glass.

outh Carolina Tonnage

CLEMSON, S.C. — July-December, 956 fertilizer distribution in South arolina totaled 122,929 tons, a 2.5% in over 119,947 tons in a compara- e period in 1955, the South Caro- na Department of Fertilizer Inspec- on and Analysis has announced. The tal for the 1956 period included 89,- 1 tons of mixed goods.

Gloomicides

When a man was asked by friends why he remained a bachelor, he answered this way: "One day when I was young, as I walked in the subway I stepped on a woman's foot. Without looking at me she shouted, "Stupid lout, why can't you be careful?"

"I was very surprised and was trying to answer when she turned to face me and gasped, 'Oh, I am so sorry, sir, I thought you were my husband!'

"That is why," he said, "I never married."

★

Aboard a freighter, Stoker first-class Jones was taking an examination for promotion. "What steps should be taken in case of a leaky tube in the boiler" asked the chief engineer. Jones pondered briefly. "The boiler room ladder, sir," he answered, "two at a time."

★

The great detective was shown into the boss' office. "Look," said the boss, "I've been robbed of thousands. Some robber has been round the country posing as one of our collectors and has simply coined money. In a week he collected more than all our travelers put together. Find him at once—and spare no expense." The great detective rose to his feet. "In a week he'll be in jail—I guarantee it."

"Jail?" roared the boss. "I want to give him a job!"

★

"As a thief who has been in this court repeatedly, I shall have to give you the most severe sentence possible," shouted the irate judge.

The prisoner paled visibly.

"Oh, no, not what you think. After what I've gone through the past few days, I've decided that I won't throw you into a nice clean little prison cell where you can spend your days completely free from care. I'll set you free: you go ahead and try to get along with the finance company, with the employment agency, with too little money, danger of war, politics, and high prices for even the necessities of life. I don't see why you should be better off than I just because you've committed a crime!"

★

Sergeant (to a recruit who has come on parade with a button unfastened): "What's the meaning of this? Sunbathing?"

★

A pretty girl is like a melody—after you marry her you have to face the music.

★

Diplomat: one who thinks twice before saying nothing.

*This is the first advertisement in the new Monsanto campaign to help you sell LION AMMONIUM NITRATE
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FOR MORE PRODUCTION, Lion Ammonium Nitrate contains TWO kinds of plant nitrogen. *Quick-acting* nitrate nitrogen that gets crops started fast . . . and *long-lasting* ammonia nitrogen that resists leaching and feeds your crops steadily during the important growing months that follow.

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Shell Chemical Corp. held a nematology workshop in New York, attended by some 200 persons. Present were pesticide formulators, dealers and allied personnel. Speakers included college plant pathologists and Shell technicians.

The President's budget message was interpreted to shed light on the Great Plains area where drouth conditions have all but killed agricultural sales. The new $20 million program over the Dakotas, Colorado, Kansas, Montana, Nebraska, Oklahoma, Texas and Wyoming is set for an indefinite period.

The Mississippi Insect Control Conference was held at State College, with speakers from the state experiment station predicting a much greater use of phosphates in boll weevil control in case heavy infestations build up on the 1957 crops. Warnings were also sounded as to the exercise of care in handling phosphates.

Farm Chemical Resources Development Corp., Denver, awarded a contract to MacKenzie & Whittle of Dallas, Texas, for digging a shaft into its potash deposits near Carlsbad, N.M.

Grasshoppers were said by USDA to pose serious threats to western and midwestern farmers and ranchers in 1957. Mormon crickets are also expected to become troublesome in a half-dozen western states, particularly Montana, Nevada and Wyoming, USDA said.

Production of coke-oven ammonium sulfate in November, 1956, dropped by 7,344,791 pounds from the same month of 1955, the Bureau of Mines reported.

Dr. J. F. Fudge, Texas state chemist, told a group at the Texas Fertilizer conference that "If we moved the amount of nitrogen which farmers could use profitably, we'd be in short supply." The conference was held at College Station, Texas.

A bill introduced into Congress proposed an examination of TVA's fertilizer manufacturing activities from the standpoint of determining the real costs involved in production; how these factors should be taken into account in reaching a price for the fertilizer material; and the approximate annual amount of taxes which would be obtainable if the fertilizer production facilities were owned by private enterprise. The bill was introduced by Bruce Alger, Texas Republican.

Diamond Black Leaf Co. began a major modernization-improvement program at its plant in Des Moines, Iowa.

Four New England chemical and fertilizer companies merged as of Jan 1. They are Apothecaries Hall Co., Waterbury, Conn.; Rogers & Hubbard Co., Portland, Conn.; Woodruff Fertilizer & Chemical Works, Inc., North Haven, Conn.; and the Old Deerfield Fertilizer Co., South Deerfield, Mass. The name of Apothecaries Hall Co., the surviving corporation, has been changed to Hubbard-Hall Chemical Co.

A newly-formed enterprise at Seattle, Washington, was begun Jan. 2 with a new line of products for farmers and gardeners in the Pacific Northwest. Known as Pacific Agro Co., the company's officers are R. W. Cool, Tonasket, Wash., president; Robert H. Allard, vice president and general manager; and Lee Fryer, vice president and manager of the plantfoods division.

Over 2 million acres of forest land were treated for the control of insects and plant diseases during 1956, USDA announced.

Farms reporting in the recent U.S. bureau of the census survey showed that they increased fertilizer consumption by about 50% in the ten year period between 1944 and 1954. Industry leaders were quoted as looking on the future of fertilizer sales with optimism. The need for lowering unit cost of producing farm products will make fertilizer use an increasing necessity in the future.

Sam L. Nevins, vice president of Olin Mathieson Chemical Corp. stated that the adoption of NPK symbols for expressing plant food values would give manufacturers of chemical fertilizers the "greatest boom in their sales history." He said that the present system of reporting fertilizer components as oxides is confusing and unnecessary.

The Entomological Society of America in its annual meeting in New York, reported results of insecticidal experiments conducted during 1956 in various parts of the country. Systemics, granules, and soil insecticides were pointed out as being increasingly important in pest control.

Santford Martin, Jr. was appointed head of publications and director of publicity for the American Potash Institute, Washington, D.C., the Institute announced. He succeeds R. H. Stinchfield, who retired Jan. 1 after having held the position since the Institute was formed in 1935.

Carry-over stocks of pesticides as of Sept. 30, 1956, were larger than they were on the same date in 1955, the USDA announced. Carry-overs in the hands of basic producers increased more than did formulators' inventories, the report said. Some chlorinated hydrocarbons were up over 90%, whereas formulators' stocks increased only 20%.

The executive committee of the National Plant Food Institute said that it looks "with disfavor" on a proposed change in reporting the phosphate and potash content of fertilizers as "P" and "K", rather than P_2O_5 and K_2O. A resolution passed by the committee stated that the Institute should act as a clearing house and make available to all parties, including state officials and state legislatures, any information on the subject.

The output of sulfur reached new highs in 1956, and exports of the mineral held near the record levels of the past few years. Consumption in the U.S. was estimated at 5,900,000 tons in 1956, as compared to 5,650,000 the previous year. Exports were expected to reach about 1,600,000 tons.

Crop Income Down In South Carolina

COLUMBIA, S.C.—South Carolina farmers harvested 214,000 fewer acres last year than in 1955, and the value of crops was down 9% from the 1955 level, the South Carolina Crop Reporting Service has reported.

Total acreage for 1956 was 3,611,000, compared to the 3,825,000 harvested the year before. Crop value in 1956 was $289,529,000, well below the $295,437,755 estimated value of the year before.

Cotton was still "king" as far as total crop value was concerned; cotton and cottonseed led the list of eight crops whose yield exceeded $5 million in value, but at $92.3 million was 12% below the value of the previous year's crop.

Tobacco, second money crop in the state, was 13% below the 1955 yield, but the 171 million pounds harvested was 9% above average. Value of the 1956 crop was $89.5 million—off $18 million, or 17% from the 1955 figure.

Record high yields per acre were recorded in 1956 for wheat, oats, barley, rye, peanuts and crimson clover seed. Total high production records were set by wheat (4,028,000 bu.), oats, barley, and soybeans. Highest total crop value on record was recorded for wheat, barley, rye, and soybeans.

At the other end of the scale, low acreage records were set in 1956 for sweet potatoes and cow peas.

Last year was the first time in 86 years that the state's corn acreage fell below one million acres.

Commercial vegetable crops, including strawberries, had a total value of $10,196,000 in 1956, compared to $9,686,000 in 1955.

Staple crops had a total 1956 value of $266,011,000, or 13 per cent below the 1955 level.

Apple Output Uptrend Seen for Virginia

BLACKSBURG, VA.—A slight uptrend in apple production in Virginia, and an improvement of the quality of pack offered for sale, is the long-term outlook for orchardists, say agricultural economists at Virginia Polytechnic Institute.

An increase in average yields in Virginia the past few years indicates that growers may be more efficient in their production. Increased yields have also tended to offset the reduction in the number of bearing trees. While the number of trees in the state has dropped, the size of orchards has increased. This indicates, the economists say, that apple production is becoming more concentrated as growers try to get the benefit of efficiency associated with larger operations. In view of the competition ahead, this production trend is likely to continue.

FIELD NOTES

(Continued from page 9)

ties and opportunities of people in a democracy.

Together people in many communities are finding, as a group, they can use more efficiently the technical and educational services set up for them. They can create opportunity and development of ability, knowledge and talent of the individual, as he takes part in community affairs.

Agriculture, first and most fundamental vocation on earth, has been slowest to mature into an organized group.

Congratulations to those who are working together for the good of all. You are building for the future.

MARYLAND FARM INCOME

COLLEGE PARK, MD.—University of Maryland agricultural economists expect Maryland farm income in 1957 to be about the same as in 1956, when it was slightly above $19 million.

Odds Established on Fertilizer Pay-Off On East Texas Forage

COLLEGE STATION, TEXAS—A recently released Texas Agricultural Experiment Station publication, "Influence of Rainfall on Profits from Fertilizer Applications to East Texas Forage," indicates that the odds for a profit are good with forage valued at $15, $20 and $25 a ton and when fertilizers applied cost $13.70 an acre.

The research authors, Dr. R. J. Hildreth, an economist, and Dr. A. G. Caldwell and Flake L. Fisher, both agronomists, say that the response of forage to fertilizer depends largely on how much rainfall is received during the growing season. By studying forage response in relation with past rainfall conditions and current prices of fertilizer and forage, they have been able to calculate whether future fertilizer applications may be profitable.

Figures for 25 locations scattered over the East Texas area have been calculated and were based on tests conducted on upland native pastures containing common Bermudagrass, brownseed paspalum, little bluestem and lespedeza. The soil series of the test pastures were Lufkin and Bowie, which are common to East Texas. The odds were figured on the basis of an application of 60-30-30 fertilizer. Forage was valued on the basis of air-dry forage produced from the test plots.

The average profit an acre when forage is $20 and fertilizer costs $13.70 was $14.16 at Bon Weir; $8.03 at Clarksville; $2.61 at College Station; $6.34 at Jefferson; $10.24 at Liberty; $4.57 at Mt. Pleasant; $7.62 at Nacogdoches and $1.70 at Trinidad. The profit was correspondingly higher when forage was valued at $25 a ton and correspondingly less when figured at $15 a ton.

Generally, point out the research workers, the locations with the highest "odds" are in the southeastern part of East Texas where rainfall also is highest. Lowest "odds" for profit areas were those on the western edge of the East Texas region. "Odds" for profit ranged from 3 out of 5 years at College Station to 19 out of 20 for Bon Weir when forage was valued at $20 a ton.

Farm Outlook Bleak in Rio Grande Valley

McALLEN, TEXAS—Texas' oldest irrigated region, the Rio Grande Valley, is facing a bleak and uncertain future. Farmers can expect enough rainfall for only a part crop, with the remaining water coming from the river.

However the river is practically dry, the reservoirs are nearly empty and there won't be enough water for everyone. A year ago the Rio Grande was sending down 10,000 acre feet of water each day, while now the river is a mere trickle of 400 acre feet every 24 hours.

The Lower Valley, where crops account for one half the total income, is facing one of the driest periods in history. Farm leaders say the cotton acreage will be greatly curtailed this year and that much land may remain idle throughout the year.

During the last 41 years, the area has received enough rainfall to make dryland crops 17 times, according to Ken Jackson, Hidalgo County agent. He said if farmers could get one or two good irrigations and would practice water conservation measures they could make a good cotton crop.

Farmers along the Rio Grande from the Gulf of Mexico on up into New Mexico are facing a serious water shortage for 1957.

COTTON HANDBOOK

AUBURN, ALA.—A "Cotton Handbook for Alabama Farmers" has been written by Jasper Jernigan, Alabama Polytechnic Institute cotton improvement specialist.

CORN ACREAGE

(Continued from page 1)

ude use of this land from other ops.

This measure was introduced by ep. August Andresen (R., Minn.), ouse Committee ranking member. he bill is an independent action and es not have the sponsorship of the dministration.

The bill departs from the administration plans since it would provide that USDA could set the price support level for corn at only between 75 and 90% of parity, whereas the administration wanted to give USDA complete flexibility for price support levels for this crop at between zero and 90% of parity. Their goals on corn acreage for 1957 is believed to be in complete agreement at the 51 million acreage base of the Andresen bill.

The Andresen bill would amend the gricultural act of 1938 as amended 1949.

That some correction of existing ice support conditions for corn is gently necessary, is another item agreement by both sides of the rn price support fight. It is known at neither side believes that the esent legal condition (after the reent corn price support referendum as defeated) of a corn acreage alment of only 37 million acres for e commercial Corn Belt would be tle more than an empty gesture. bservers and analysts of loan proam techniques within USDA say at such an acreage allotment would meaningless and possibly not more an 10% of the producers would mply.

Such a condition would lead to unttered planting of corn and soyans and other small grains, threatning another year of vast overproction of feed grains which are aldady in sharp oversupply.

It is now sensed that USDA and ongress may find common ground a one-year bill fixing the price pport level for corn at $1.36 bu., e same as last year, for the comercial Corn Belt and at 75% of e commercial Corn Belt price supt level for other non-commercial rn producing areas. On the basis the parity price for corn in 1956, is dollar and cents level of supt meant about 76% of parity.

However, although the President's dget message said unequivocally at price support for the 1957 corn op would not be available for nonmpliers with acreage allotments, it understood that USDA officials ve other administrative ideas. For e 1956 corn crop non-compliers th acreage allotments in the Corn lt obtained price support at $1.25 r bushel.

But it all adds up to the good f the plant food and pesticidal hemical industries. The probable rice support level for corn at $1.36 u. is a profitable level for effient corn farmers who get optium yields through proper protection of the crop by the use of sticidal chemicals.

The fine prospect of agreement beeen Congress and USDA on the ution of the corn acreage problem set forth above, augurs well for agricultural chemical industries 1957 corn crop and the other d crops. Since land taken out of n acreage would not be available other field crops if the farmer nted price support protection as ll as soil bank payments (90¢ bu. es yields per acre), it may be dily seen by the chemical indusies and their dealer organizations t the commercial Corn Belt farmcan capture profits in two ways. e is through compliance, and the ed, through a maximum yield his corn acreage. Since he may be able to put into production r crops on corn land taken out of production, this condition will sharpen his thinking about additional plant food and pest control materials to a larger degree than heretofore in many instances.

This possible compromise for the corn problem this year may be on balance the best promotional feature which has ever been devised to educate the commercial Corn Belt farmers.

Not only will this solution now seen in the making be to the advantage of the plant food and pesticidal chemical industry for the commercial Corn Belt, but it will have increasingly large importance to the non-commercial Corn Belt.

If, as comtemplated, USDA does put a price floor under the market price for corn next fall of $1.25 bu. in case of a large crop, then the non-commercial Corn Belt will have a protection umbrella and through adequate use of fertilizer and good cultivation practices including the use of pesticides, they too can cash in on a good price market for their crop. Particularly since it will not be subject to shifting winds of interior speculative markets which will be influenced by the "corn floor" protection of the $1.25 bu. support.

Congress is expected to move more promptly than usual in rushing through amending legislation on the corn problem in time for the chemical industry to line up its attack to make the most of this major market.

Corn legislation is now seen probable of enactment before the end of February giving full opportunity for the chemical industry to align its production and sales appeal to serve the interests of both the commercial and the non-commercial Corn Belt.

In connection with this step-child of the corn producers, the non-commercial Corn Belt, it may be noted that as producers in the non-commercial Corn Belt increase their production, they too become members of the upper crust of the corn society caste system, and obtain higher levels of price support. Now is the time, it is said, for the non-commercial corn farmers to work their way up in the corn society and become commercial Corn Belt farmers.

Witco Appointment

NEW YORK—Appointment of H. Russell Spielman as manager of the technical service department of Witco Chemical Co. is announced by William Wishnick, executive vice president. This department, staffed with over 20 members, is responsible for the technical service on Witco's expanding line of chemicals, except carbon blacks. Headquartered in Chicago and with supplemental laboratories in Brooklyn and Los Angeles, members of the department also conduct experimental work in customer's plants and labs.

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potash division

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NORTH CAROLINA PESTICIDE SCHOOL

(Continued from page 1)

vise the farmer about the latest research findings.

D. E. Ellis, head of the plant pathology department, introduced the first major speaker, Dr. George L. McNew, managing director of the Boyce Thompson Institute of Plant Research, Inc., Yonkers, N.Y.

Reviewing the search for the perfect fungicide, Dr. McNew stated that the price of ignorance is poverty. To illustrate his premise, he traced several instances when knowledge could have prevented famine and starvation.

"Mankind," he explained, "needs a reservoir of knowledge. Without basic knowledge, there is little hope of meeting the demands of the hour and the problems attendant thereto."

Using slides, Dr. McNew showed how changes in chemical structure effect the prerequisite properties of fungicidal compounds and how physical properties of formulations influence the protective capacity of a fungitic molecule.

Concluding, Dr. McNew took a brief glimpse into the fungicidal future. "The trend is toward more and more specific chemicals rather than a universal one, he stated. This will mean limited function of the materials."

According to statistics, 7% of the potential production of the U.S. is lost because of plant disease. This amount, Dr. McNew reported, can be greatly reduced through better chemicals, better programs of crop rotation, and education.

C. N. Clayton, plant pathology department, reported on fungicidal control of fruit disease with special emphasis on the problems of apple scab, powdery mildew, and bacterial spot on peaches.

Problems in cotton seed treatment were covered by Prof. Garriss.

"During the spring of 1956," he stated, "it was observed that unequal distribution of slurry materials on commercially treated, reginned seeds, was a common occurrence."

"Consequently," Prof. Garriss continued, "an important question was raised: was injury resulting from overdosage (caking) of the slurry material on the seeds?"

Through the use of slides, he showed experimental evidence that pointed out that there is a problem involved with injury resulting from unequal distribution of slurry materials in commercial seed treating operations now available.

C. J. Nusbaum and N. N. Winstead, plant pathology department, devoted their talks to soil treatments for disease control in plant beds.

According to last spring's tests using methyl bromide, bedrench, A-A and D-D drench on nematode populations, the results from methyl bromide were outstanding. Drench treatments also gave adequate control when properly used.

Prof. Winstead also praised methyl bromide treatments. He stated that it is effective both as a weed controller and as a nematocide, and its recommended dosage is two pounds per 100 sq. ft. of plant bed.

From the plant pathology extension, F. A. Todd gave results of chemical soil fumigant treatments. He pointed out that an average increase of $250 in yield per acre had resulted from fumigant treatments.

Disease control in floral crops was the topic discussed by Robert Aycock of floral and vegetable disease research in the plant pathology department.

His talk was limited to current problems with daffodils, gladioli, and dutch iris, three of the main commercial bulbs grown in North Carolina.

J. C. Wells reported on Southern stem and root rot, particularly in peppers, peanuts, and tomatoes, to complete the morning program.

Opening the afternoon session was Dr. James B. DeWitt of the Patuxent Research Reserve, Laurel, Md. Dr. DeWitt streamlined his topic of new developments in rodent repellants and rodenticides to "Of Mice and Molecules."

Tracing the development of rodent control, Dr. DeWitt stated, "Philosophies and attitudes changed when medical research established that rodents and their ectoparasites were vectors of plague, typhus, infectious jaundice, and other diseases, and when economic studies indicated that rodent damage to foods and other commodities amounted to several hundred million dollars per year."

The newer techniques for rodent-control, according to the speaker, depend upon the cumulative effects of multiple small doses and baits containing 0.025 per cent active ingredients. Bating must be continued for 14 or more days to insure adequate control, although some kills may be obtained within three or four days after exposure of the baits.

Continuing, Dr. DeWitt reported that at least six compounds have been shown capable of application by this method. Three are hydroxycoumarins. The others are 1, 3-indandiones.

Concluding the afternoon session, Orvin E. Rud, Glenn C. Klingman, and W. G. Westmoreland, all of the field crops department, presented the current herbicide picture.

Mr. Rud reported on the herbicide situation in peanuts, cotton, and soybeans. Results of weed control experiments with several pre-emergence herbicides have not been consistent, the performance seeming to depend on environmental and soil conditions at the time of application.

For cotton, "Diuron" (Karmex D L) continues to perform satisfactorily, but for soybeans and peanuts, results of weed control were inconsistent, he said.

Reporting on the corn research at N.C. State College, Dr. Klingman said results indicate that a mixture of solution nitrogen, a wetting agent and 2, 4-D may serve both as a weed killer and as a nitrogen fertilizer for corn.

Mr. Westmoreland discussed "Simazin" and its tests. He warned against improper use or failing to follow directions for herbicides around the house, on gardens, lawns, and shrubs.

Following the research reports, the group assembled outside for equipment demonstrations by Maxwell Insecticide Co. of Cary, N.C., the John Bean Manufacturing Co. of Lansing, Mich., and Insect Control Sales and Service of Candor, N.C.

In addition to the equipment displays, exhibits were furnished by the DuPont Co., Wilmington, Del., Hercules Powder Co., Wilmington, Del., and Pennsylvania Refining Co., Butler, Pa.

Research reports on tobacco pests opened the final day of the school. R. L. Rabb and F. E. Gutherie, both of the entomology department, discussed tests on control of hornworms, wireworms, flea beetles, and budworms.

Research reports followed on cotton pests, W. J. Mistric; apple pests, G. F. Turnipseed; forage crop pests, J. R. Dogger; vegetable pests, C. H. Brett, and soil insects, W. M. Kulash, all of the college's entomology department.

George D. Jones of entomology extension reviewed major changes in control recommendations, foreseeing more attention to residues during the current year.

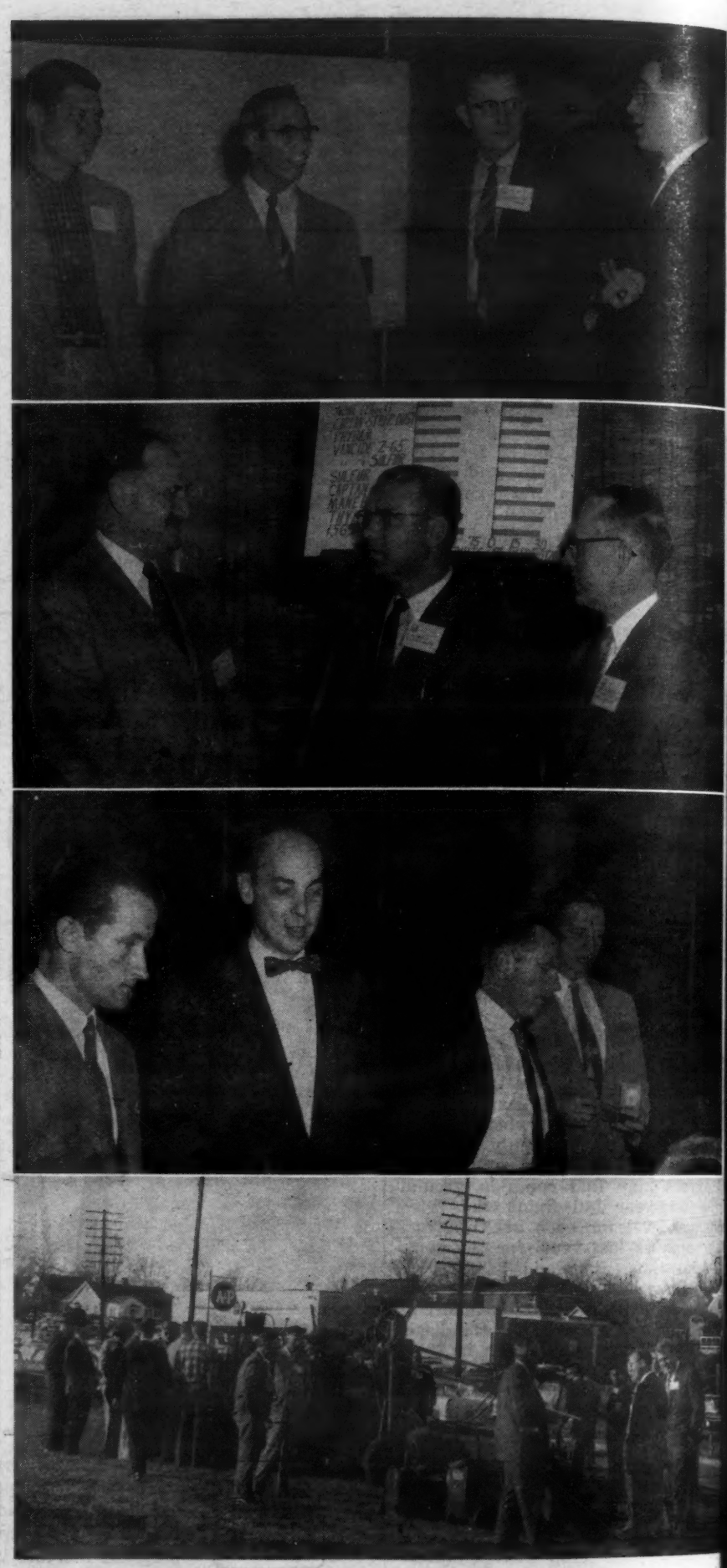
In a cooperative insect survey report, included on the program for the first time, M. H. Farrier of the entomology department explained the survey's function.

The work consists of gathering data, identifying insects, conducting spot checks periodically, and reporting the State's latest findings to the USDA for publication.

A discussion of bees and other pollenating insects concluded the program. W. A. Stephen, entomology extension, warned against the misuse of pesticides to kill necessary insects.

Each person attending the scho received a copy of the college's 19 Pesticide Manual, a 130 page book covering latest research and dosa information and other pertinent i formation in the pesticide field.

Copies of the manual may be orde ed for $1 for single copies or 75¢ f four or more. Orders and chec should be mailed to the division college extension, Box 5125, St College Station, Raleigh, N.C.



AT NORTH CAROLINA PESTICIDE SCHOOL—College scientists, repre sentatives of the industry and research people were included in the mor than 200 persons in attendance at the ninth annual North Carolina Pesticid School held at North Carolina State College, Raleigh, Jan. 10-11. Top photo left to right, are John W. Glover, agricultural extension engineer; Dr. Clyd F. Smith, entomology department; and W. G. Westmoreland, agronomy ex tension, all of North Carolina State College; and Harold H. Nau, America Cyanamid Co., Raleigh.

In the second photo are Dr. George L. McNew, Boyce Thompson Institut of Plant Research, Yonkers, N.Y. (right) and Dr. James B. DeWitt, U.S. Fis & Wildlife Service, Laurel, Md. (left) chatting with H. R. Garriss, in charg of the State College plant pathology extension. Mr. Garriss was in charge the two-day school.

Third photo, left to right: Tuma Dilliard, Quality Chemical Co., Durham N.C.; Darrell Woofter, Chemagro Corp., Decatur, Ga.; R. H. Johnson, Stauffe Chemical Co., Decatur, Ga.; and Jay Wright, Stauffer Chemical Co., Orland Fla.

Bottom photo shows exhibits and displays being inspected by part the crowd present on the opening day of the meeting.

Industry Patents and Trademarks

2,777,762

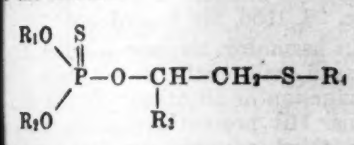
Method and Composition for the Control of Undesirable Vegetation. Patent issued Jan. 15, 1957, to Burton . Toornman, Midland, Mich., assign- to The Dow Chemical Co., Midland, Mich. A method which comprises the tep of contacting seeds and emerging eedling rootlets, while positioned in a rowth medium, with a growth in- ibiting amount of 2,6-dichloroanisole.

2,777,791

Compositions and Method for Com- ating Bacterial and Fungal Infec- ions in Plants. Patent issued Jan. 15, 957, to Frederick C. Visor, Jericho, eorge L. McNew, Hastings-on-Hud- on, George Koch, Jamaica, and Al- aro Goenaga, New York, N.Y., as- ignors to Chas. Pfizer & Co., Inc., rooklyn, N.Y. A composition useful n combating bacterial and fungal dis- ases of plants, comprising as the rincipal active ingredients, a strep- omycin-type antibiotic and a sub- tantially water-insoluble copper fun- icide.

2,777,792

Pest Combating Agents. Patent is- ued Jan. 15, 1957, to Karl Lutz and tto Jucker, Basel, Switzerland, as- ignors to Sandoz A.G., Basel, Switz- rland. A pest controlling composition onsisting essentially of a thionophos- horic acid ester which corresponds o the formula



herein each of R_1, R_2 and R_4 repre- ents a lower alkyl group and R_3 epresents a lower alkoxymethyl roup, and a pesticide carrier there- or.

2,777,793

Fungicidal Composition and Meth- ds of Applying. Patent issued Jan. 5, 1957, to Clifton R. Neumoyer, mbler, Pa., assignor to the Penn- lvania Salt Mfg. Co., Philadelphia. he method of controlling fungus on lants which comprises contacting the tems and foliage of the plants with finely-divided mixture of 5-chloro- - hydroxy - alpha - (trichloromethyl) enzyl alcohol and a solid inert ex- ender.

2,777,794

Polychlorinated Pyrene as a Parasi- icide. Patent issued Jan. 15, 1957, to ugene E. Kenaga, Midland, Mich., ssignor to The Dow Chemical Co., idland, Mich. A composition com- rising an inert parasiticide carrier in dmixture with a chlorine addition erivative of pyrene having an aver- ge chlorine analysis of from 5.73 to 2 chlorine atoms per mole and repared by mixing pyrene with an xcess of liquid chlorine at a tempera- ure below —20° C. and under suffi- ient pressure to keep the chlorine quefied, while exposing the mixture o diffused daylight at an intensity ot to exceed 85 foot candles.

2,777,795

Sand-Grain Core Insecticidal Com- osition. Patent issued Jan. 15, 1957, o John F. Les Veaux, Middleport, nd Edward F. Orwoll, Medina, N.Y., ssignors to Food Machinery & Chem- al Corp. An insecticidal composition the form of a pellet comprising a ore of a grain of silica at 20 to 60 esh and a coating upon said silica rain of a finely ground argillaceous ineral powder not larger than about 5 mesh carrying an organic insecti- ide.

2,777,877

Process for the Production of Urea. atent issued Jan. 15, 1957, to Geo- mo Fauser, Milan, Italy, assignor to ontecatini Societa Generale per ndustria Mineraria e Chimica. In process for producing urea from mmonia and carbon dioxide, which nprises mixing in an enclosed space carbon dioxide with ammonia in excess over the stoichiometric amount and heating the mixture under pressure, the improvement of adding to the mixture an amount of water which is more than 6 and less than 20% of the total mixture, heating to about 170° C. at a pressure of about 160 atm. for a time sufficient to produce urea, subjecting the reacted mixture to a pressure drop of 120-150 atm., heating the mixture rapidly to 130°-140° C., gravity-separating an aqueous urea solution from unreacted ammonia and carbon dioxide vapors, cooling said vapors to 60°-90° C. and condensing them at a pressure of 20-45 atm., dissolving the condensed vapors in aqueous ammonia, scrubbing vapors rising during said condensation with water, adding the scrubbing liquid to said aqueous ammonia solution, recycling at least part of said solution into contact with additional carbon dioxide and ammonia in said enclosed space, and adjusting the ratio between said recycling solution and said additional carbon dioxide and ammonia so as to provide the mixture with said excess of ammonia over the stoichiometric amount and said 6-20% of water.

2,777,882

Dehydrochlorination of Benzene Hexachloride. Patent issued Jan. 15, 1957, to David D. Humphreys, Baton Rouge, La., assignor to Ethyl Corp., New York. A process for the dehydrochlorination of a benzene hexachloride comprising contacting said benzene hexachloride at a temperature of at least 180° C. with less than 10% by weight of the benzene hexachloride of a catalytic compound represented by

$$MmXx$$

wherein M is a metal selected from the group consisting of alkali and alkaline earth metals; X is a halide and m and x are small whole numbers.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Nemagon, in capital letters, for soil fumigant. Filed June 8, 1955, by Shell Chemical Corp., New York. First use, April 29, 1955. (Published in Official Gazette, Jan. 15, 1957.)

Nemorad, in capital letters, for nematocide. Filed March 12, 1956, by Mallinckrodt Chemical Works, St. Louis, Mo. First use, Feb. 14, 1956. (Published in Official Gazette, Jan. 15, 1957.)

Dedrench, in capital letters, for sterilant for plant bed soils. Filed April 27, 1956, by Food Machinery & Chemical Corp., New York. First use Oct. 14, 1955. (Published in Official Gazette Jan. 15, 1957.)

Fatal-Fly, in capital letters, for dry bait fly killer. Filed May 1, 1956, by Hess & Clark, Inc., Ashland, Ohio. First use April 18, 1956. (Published in Official Gazette Jan. 15, 1957.)

Mock's Superturf Weed-L-izer, hand-drawing design representing house and yard, for chemical weed exterminator used in combination with fertilizer. Filed May 1, 1956, by Mock Seed Co., Pittsburgh, Pa. First use March 21, 1956. (Published in Official Gazette Jan. 15, 1957.)

Pellin, in capital letters, for insecticide. Filed May 9, 1956, by Walter Ratner, Chicago, Ill. First use June 3, 1955. (Published in Official Gazette Jan. 15, 1957.)

Glorion, in hand-lettered characters, on rectangular design, for fertilizer, soil-builder and conditioner. Filed June 5, 1956, by Soil Builders International Corp., New York. First use, April 26, 1954. (Published in Official Gazette Jan. 15, 1957.)

Nutronite, in capital italic letters, for organic fertilizer. Filed Aug. 3, 1956, by Smith-Douglass Co., Inc., Norfolk, Va. First use, Oct. 1, 1954. (Published in Official Gazette Jan. 15, 1957.)

Fas-T, in capital letters, for fertilizers. Filed Aug. 8, 1956, by Vital Earth Corp., New York. First use Feb. 28, 1956. (Published in Official Gazette Jan. 15, 1957.)

Old Navy Bombers Sold to Crop Dusters

SACRAMENTO — Fifty obsolete Navy torpedo bombers once destined for the scrap pile have been sold to crop dusters for $125,000, according to Congressman John E. Moss of Sacramento.

Mr. Moss succeeded in getting the planes put up for bids at the request of the California Crop Dusters Assn. and several other agricultural aircraft groups. Mr. Moss said that 25 additional planes are to be sold soon at the Norfolk Naval Air Station.

Industrial Fumigant Announces Sales Expansion Plan

KANSAS CITY, MO.—The Industrial Fumigant Co. of Kansas City, Mo., has announced plans to extend its operations in the field of grain sanitation to include the smaller local elevators and other grain storage installations.

According to Glenn O. Munger, Jr., vice president in charge of sales, the company has confined its major efforts in the past to sanitation service and sale of fumigants and insecticides to large food industry firms which employ stored grain in their operations.

"Company growth and an increasing demand for our technical services now have made it possible for Industrial to make available its wide experience and know-how in the sanitation field to a wider group of customers," Mr. Munger said.

First step in the expanded sales effort was the recent announcement of the Industrial 4-Point Plan for sanitation of stored grain. Directed at grain storage operators in the smaller communities, at feed dealers, farmers and other groups, the program offers a complete line of sanitation products to the dealer, plus the backing of the Industrial Fumigant Company's technical staff in supervising application and use of fumigants, insecticides and equipment.

Mr. Munger said that the firm was "in a position to offer use-tested products and methods which have been developed through experience in handling some of the food industry's toughest grain sanitation problems. And as an important addition, our trained staff of technicians will be available to advise the user of our products, or the dealer, or even to make the application itself when problems arise."

Group to Work for New Branch Station

PORTLAND, ORE. — Absence of budget recommendation from Elmo Smith, retiring Oregon governor, for funds to create a northern Willamette Valley branch experimental station has led to the suggestion that a committee take the matter up with the 1957 state legislature.

This decision was made at a meeting of some 40 Willamette Valley farmers, county agents and Oregon State College representatives.

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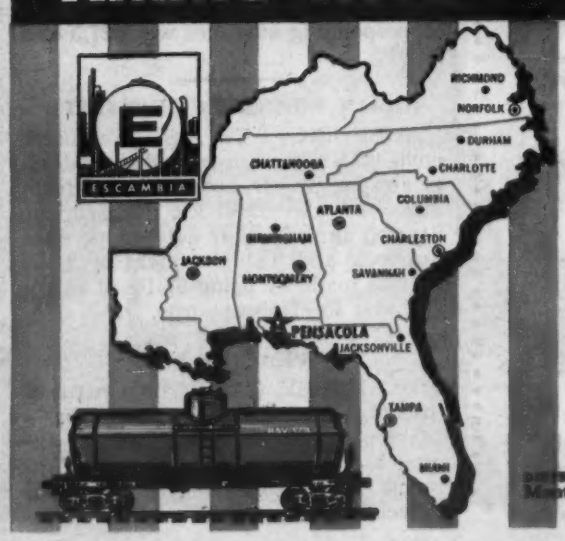

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FERTILIZER CONSUMPTION

(Continued from page 1)

lantic and West North Central regions, where nearly 45% of the tonnage of all fertilizers was used. These three regions also accounted for most of the decreases in mixed fertilizers and materials.

Among the individual areas, the East North Central region showed the largest decrease in mixed fertilizers (152,000 tons), but this was largely offset by the increase in use of materials (132,000 tons).

In only the Mountain and Pacific regions was there an increase in the use of mixed fertilizers. However, the mixtures used in these regions comprised less than 15% of the tonnage of all fertilizers used therein and less than 3% of the total consumption of mixtures in the U.S.

The consumption of fertilizer materials for direct application showed increases in only three regions—East North Central (13.3%), West South Central (1.1%) and Pacific (.5%).

Of the various classes of materials used for direct application an increase in consumption was shown only by the phosphate products (Table 2). Among such products the greatest increase (nearly 55%) was in phosphate rock, chiefly in the East North Central and West North Central regions where it is mostly used.

The consumption of normal superphosphate appears to have decreased about 15%, while the other two principal phosphate materials—concentrated superphosphate and the ammonium phosphates (11-48, 13-39, 16-20)—showed little change from their use in 1954-55.

The consumption of anhydrous ammonia for direct application is estimated to have totaled 431,000 tons, an increase of 21.8% over the use in 1954-55 (Table 3). The increases, occurring in all regions, were greatest for the East South Central, West South Central and Mountain regions where they were approximately 40% in each area. The use of aqua ammonia increased 30.2%, but the consumption of nitrogen solutions was nearly the same as in 1954-55.

The estimated quantity of primary plant nutrients contained in all fertilizers consumed in the U.S. and Territories was 6,081,000 tons (Table 4). This was 39,000 tons (.6%) less than in 1954-55. The total for 1955-56 comprised 1,952,000 tons of nitrogen, 2,240,000 tons of available P_2O_5 and 1,889,000 tons of K_2O.

These quantities represent decreases of 9,000 tons (.4%) for nitrogen and 44,000 tons (2%) for available P_2O_5 and an increase of 14,000 tons (.8%) for K_2O from the respective consumptions in 1954-55.

Increases in the consumption of total primary nutrients, shown in five of the ten regions, were proportionately the greatest in the West South Central (7.4%) and Pacific (5.7%) areas. The largest decreases were in the West North Central (8%) and Middle Atlantic (5.9%) regions and the territories (7.3%).

The use of nitrogen and P_2O_5 increased in five regions, and K_2O consumption increased in six regions. With the exception of K_2O, however, these increases did not offset fully the decreases that occurred in the other regions.

The consumption of primary plant nutrients supplied by mixed fertilizers is estimated to have been 4,275,000 tons, comprising 815,000 tons of nitrogen, 1,789,000 tons of available P_2O_5 and 1,671,000 tons of K_2O. These quantities represent 12,000 tons (1.5%) more nitrogen, 32,000 tons (1.8%) less available P_2O_5, and 13,000 tons (.8%) more K_2O than those in 1954-55.

Materials used for direct application supplied 1,137,000 tons of nitrogen, 451,000 tons of available P_2O_5, and 218,000 tons of K_2O, representing decreases of 21,000 tons (1.8%) for nitrogen and 12,000 tons (2.7%) for available P_2O_5 and an increase of 1,000 tons (.6%) for K_2O as compared with 1954-55.

Total primary nutrients in all mixed fertilizers consumed in the United States and territories averaged 29% as compared with 27.9% in 1954-55. For all direct-application materials that supplied primary nutrients the corresponding averages were 27.5 and 27.86%.

Table 2—Estimated Consumption for Direct Application

Class	Year Ended June 30, 1955	Year Ended June 30, 1956	Change from 1954-55
	1,000 tons	1,000 tons	Percent
Chemical nitrogen materials	3,500	3,262	- 6.8
Natural organics	461	444	- 3.6
Phosphates	2,233	2,469	+10.6
Potash materials	401	393	- 2.1
Secondary and trace nutrient materials	780	779	- 0.2
Total	7,375	7,347	- 0.4

Table 3—Estimated Use of Nitrogen for Direct Application

Product	Year Ended June 30, 1955	Year Ended June 30, 1956	Change from 1954-55
	1,000 tons	1,000 tons	Percent
Ammonia, anhydrous	354	431	+21.8
Ammonia, aqua	232	302	+30.2
Ammonium nitrate	1,115	930	-16.6
Ammonium nitrate - Limestone mixtures	358	307	-14.3
Ammonium sulfate	520	411	-20.9
Calcium cyanamide	69	65	- 5.3
Calcium nitrate	56	61	+ 8.8
Nitrogen solutions	109	108	- 0.6
Sodium nitrate	616	547	-11.2
Urea	68	92	+33.4
Other	3	8	---
Total	3,500	3,262	- 6.8

Table 4—Estimated Nutrient Content, All Fertilizers

Region[1]	Quantity N	Quantity Available P_2O_5[2]	Quantity K_2O	Quantity Total	Change from 1954-55 N	Change from 1954-55 Available P_2O_5	Change from 1954-55 K_2O	Change from 1954-55 Total
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	Percent	Percent	Percent	Percent
New England	28	48	44	120	+ 3.3	+ 0.2	- 3.0	-0.3
Middle Atlantic	120	219	188	527	- 0.9	- 8.9	- 5.2	-5.9
South Atlantic	387	464	494	1,345	- 2.7	- 2.7	+ 1.2	-1.3
East North Central	270	596	594	1,460	+ 1.4	+ 3.5	- 1.7	+1.0
West North Central	241	314	180	735	-14.0	-11.6	+ 9.8	-8.0
East South Central	282	254	225	761	+ 4.0	- 1.4	+ 3.4	+2.0
West South Central	214	160	87	461	+10.9	+ 4.2	+ 4.9	+7.4
Mountain	75	63	3	141	- 1.1	+ 4.9	+16.2	+1.8
Pacific	278	103	35	416	+ 4.8	+ 5.9	+13.3	+5.7
Continental U. S.	1,895	2,221	1,850	5,966	- 0.1	- 1.9	+ 0.9	-0.5
Territories	57	19	39	115	- 9.1	- 8.0	- 4.1	-7.3
Totals: 1955-56	1,952	2,240	1,889	6,081	- 0.4	- 2.0	+ 0.8	-0.6
1954-55	1,961	2,284	1,875	6,120	0.0	0.0	0.0	0.0
1953-54	1,847	2,236	1,814	5,896	- 5.8	- 2.2	- 3.3	-3.7

1/ The States comprising the regions are listed in footnotes of Table 1.
2/ Includes, as available P_2O_5, 2 percent of the colloidal phosphate and 3 percent of the phosphate rock marketed for direct application.

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GRAIN SORGHUM FERTILITY

LUBBOCK, TEXAS—Fertilizer pays off in this area when used on grain sorghums, according to tests made by the Lubbock Experiment Station in 1956. On field plots near Lubbock and Tulia, a yield of 5,865 lb. was made by using 80 lb. of nitrogen and 40 of phosphorus.

PEACH DAY

BERKELEY, CAL.—The control of insects affecting peaches will be a feature subject of Peach Day, an annual event at the University of California, Davis, scheduled this year for March 2 starting at 9 a.m.

C. E. Russell

C. E. Russell Named Beaird Vice President

SHREVEPORT, LA.—C. E. Russell has been elevated from works manager to vice president in charge of manufacturing at the J. B. Beaird Co., Inc., Shreveport, manufacturer of heavy steel products, J. Pat Beaird, president, has announced.

The election of Mr. Russell is the first executive promotion since the merger of the Beaird company and American Machine & Foundry Co. on Dec. 26, 1956, Mr. Beaird said.

In assuming his new position, Mr. Russell will continue to direct the production of all manufacturing divisions. His present promotion marks the third advance for Mr. Russell since he became associated with Beaird on June 29, 1953. First assigned as manager of the machining division, he moved up to assistant works manager on June 29, 1954, then advanced to works manager on Feb. 16, 1955.

As vice president in charge of manufacturing, Mr. Russell will exercise general supervision of production at Beaird's new plant in Clinton, Iowa, scheduled to begin operations this spring as well as the Shreveport plant with its production lines for the manufacture of packaged compressor plants, LP-gas and anhydrous ammonia storage equipment, piling for offshore drilling platforms, air receivers and contract machining.

Before coming to Shreveport, Mr. Russell was assistant general manager of the Turner Brass Works in Sycamore, Ill., for three years.

Arthur F. Bixby Named to Pennsalt Marketing Post

PHILADELPHIA—Arthur F. Bixby has been named manager of marketing research for Pennsalt Chemicals' industrial division. Under the director of marketing, George R. Lawson, Mr. Bixby will supervise product managers and direct market development on the company's heavy chemicals and "Sharples" brand specialties.

Prior to his promotion, Mr. Bixby was general manager of agricultural chemicals for Pennsalt's western division at its headquarters in Tacoma, Wash. A graduate of Massachusetts State College, he joined Pennsalt in 1938 as assistant to the director of heavy chemical sales.

Representative Named

SAN FRANCISCO—Ken Freiberg has been named sales representative for Cole and DeGraf, San Francisco distributor of urea and other fertilizers and agricultural chemicals in northern California, according to an announcement by Roy P. Cole. Mr. Freiberg covers portions of the Sacramento and San Joaquin valleys.

ernard Clayton amed to New Diamond lack Leaf Position

CLEVELAND—Appointment of ernard Clayton as district manager Diamond Black Leaf Co.'s western strict sales office, San Jose, Cal., has en announced by George V. Dupont, neral manager.

Mr. Clayton first joined Diamond ack Leaf, manufacturers and mar- ters of pesticides and other agri- ltural chemicals, at its Waco, Texas les office in the spring of 1955. Pre- ously, he had served in various pro- uction and sales capacities for the rmer Black Leaf Division of Vir- nia-Carolina Chemical Corp. from 30 to 1955. Mr. Clayton and his ife reside at 1645 Lincoln Ave., San se.

ovember Super Output ips From Year Ago

WASHINGTON — U.S. production superphosphate and other phos- atic fertilizers during November to- led 207,612 short tons, a decline om 216,397 short tons in November, 55, the Bureau of the Census has ported.

November shipments amounted to 5,453 short tons, compared with 5,294 short tons in November a year rlier. Stocks on hand at the end of ovember totaled 399,995 short tons, increase from 333,858 short tons the end of November, 1955.

Included in last November's pro- ction total were 132,398 short tons normal, 58,855 short tons of con- ntrated and 14,644 short tons of her phosphatic fertilizers. Output wet-base goods and enriched was reported.

ntomological Society oins Florida Group

MIAMI — The Sub-Tropical Ento- logical Society of Florida has vot- to become affiliated with the orida Entomological Society, and nceforth will be known as the Sub- opical Branch of the state society. Dr. F. Gray Butcher, professor of tomological research at the Uni- rsity of Miami, is new chairman of branch. Vice chairman is Dr. hn E. Porter, U.S. Public Health rvice. A. S. Mills from the Plant spection Department of the U.S. partment of Agriculture, is secre- y-treasurer. The Sub-Tropical anch includes the Southeast Flor- a counties of Palm Beach, Broward, llier, Dade and Monroe.

BRIEFINGS

(Continued from page 1)

ainst importation and movement of ect- or disease-carrying products.

2. Plant-pest surveys, an increas- ly efficient method for detecting st signs of an insect or plant dis- se new to a region or a country.

3. Research to help provide tools control and eradication of pests t are now a problem and to keep ead of possible future problems.

4. Federal-state programs for con- l and eradication of plant disease insect pests of regional or na- nal significance.

Ways of interesting and training re young people in pest control ds is another of the problems to be cussed at the meetings.

The increase in foreign trade and vel has brought increasing danger the introduction into this country oreign plant diseases and injurious ects," says B. T. Shaw, adminis- tor of USDA's Agricultural Re- rch Service. "We need to take a d look at this potential threat to agriculture. We need to review regulatory and research activities see what we have done and what can do to protect our agriculture inst plant pests already here or cking at our door."

SOYBEAN NEMATODE

(Continued from page 1)

visor of the Department of Agriculture office in Memphis, said.

"These cysts are brought out by flotation, but with the ground as wet as it is now, they're so waterlogged they won't wash out. But we do have men out now inspecting recleaned beans and trash to see if they carry the nematodes in shipment. We don't think they do, but we'll just have to see.

"We are afraid the pest may be over a lot of soybeans in a pretty wide area, but we'll just have to wait until a more complete survey can be made," he said.

James Epps, associate plant pathologist at the West Tennessee Experiment Station, Jackson, was the one who found the disease in Lake County last September.

"It's a pretty serious disease," Mr. Epps said. "Right now the only control we know much about is fumigation of the soil, which costs about $30 to $40 an acre. Snap beans also are affected."

As announced earlier, the hearing at Washington will start at 10 a.m. in Room 218A of the Administration Building of the USDA. The idea is to see if the disease is carried by the harvested bean itself and to gather information in combating the nematode, which causes "yellow dwarf" disease in one variety of soybean.

The nematode was first discovered in North Carolina in 1954.

The American Soybean Association says Missouri, North Carolina and Tennessee may be quarantined by the Federal Government, depending upon findings at the Jan. 31 hearing.

If so, all soybeans moving out of the states must be inspected and possibly fumigated. The proposed quarantine would apply to individual soybean plants and soybean hay, also to annual lespedeza and common vetch, also hosts to the nematode, it was pointed out.

Gerald L. Dearing, cotton editor of The Memphis Commercial Appeal, and recognized as a crop expert, said a quarantine of Tennessee soybeans could upset the traditional marketing pattern.

"There are enough plants in Memphis to process the state's crop. A quarantine would have no effect on the finished products—oil, etc. The difference would be that Mississippi and Louisiana beans would move to export, instead of those now shipped overseas."

FARM MANAGERS TO MEET

FARGO, N.D.—The annual session of the Northwest Farm Managers Association is set for Fargo Feb. 19-21, it is announced by Martin G. Kruse, Kindred, president of the group. The economics side of producing better farm incomes will carry through discussions on farm crops and livestock management discussions.

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RESEARCHER URGES . . .

Keep Reservoir of Knowledge Well-Filled

The importance of basic knowledge in solving the knotty technical problems of plant nutrition and pest control, is so fundamental that one might assume it will be taken care of automatically. This is not necessarily true, however, so it is well to encourage research people to continue their work in many directions even if the results may seem unrelated to the problem at hand.

In a talk before the recent ninth annual pesticide school at Raleigh, N.C., Dr. George L. McNew, managing director of the Boyce Thompson Institute of Plant Research emphasized this fact in his discussion of factors involved in the search for a "perfect fungicide."

He put it this way: "Every human endeavor has a price tag on it. The price of ignorance is poverty," he said. As an illustration, he described conditions in the dark days of 1847 in Ireland, when the great potato famine was brought about by late blight which devastated practically the entire crop.

Dr. McNew pointed out how pathetic it was, that the means of halting this plant disease lay within easy reach, but no one possessed any knowledge along this line. As a result of this ignorance nearly a million persons out of a population of 8 million, died in the famine, in the midst of mountains of copper slag.

Despite the fact that local newspaper reports at that time noted the fact that potatoes grown near the copper smelting works at Swansea remained healthy, while those in surrounding vicinities were totally destroyed, no one grasped the significance of this.

"It cost the (Irish) government 8 million pounds for the most rudimentary type of relief, while a few thousand pounds expended on use of copper as a fungicide would have averted the entire disaster," Dr. McNew observes. "The record shows, however, that 45 years were to elapse before spraying of potatoes with copper was introduced into this area. As unbelievable as this may seem, it was a full decade after Millardet had discovered Bordeaux Mixture's effectiveness against grape mildew before its use spread to the potato."

Thus, Dr. McNew points out that "These facts are set down here to point out that mankind needs a reservoir of knowledge. It must be carefully filled with multitudinous facts against the demands of dire human need. It is difficult enough to bring forth the new development even when the basic knowledge is available. Without the basic knowledge, there is little hope of meeting the demands of the hour and problems attendant thereto," he says.

There are those in America who favor a slackening off of basic research in view of crop surpluses presently vexing the agricultural economy. "Why spend good money searching ways to grow more crops, when we can hardly take care of the farm output as it is?" they ask.

Answers to this type of thinking are many, but among them are some potent facts about the role played by research in cutting down the unit cost of production of different crops. It enables farmers to realize better incomes without expanding their total output. This is certainly not contributing to further surpluses.

Another serious spectre is the mounting evidence of resistance on the part of insects to different pesticidal chemicals. It takes a great deal of basic research in the fields of insect physiology and chemistry to find out, for instance, how it is that the bugs manage to survive these toxicants and then to pass on this resistance to succeeding progeny. The farther we go into the fields of entomology and plant pathology, not to mention the broad study required in developing weed control and understanding plant nutrition, the more it is realized that there are vast unexplored areas ahead.

Dr. McNew is quite correct in his remark that the price tag on ignorance is frequently poverty. The agricultural chemical industry will keep right on researching and experimenting, and the results will continue to be substantial and worth while.

Nematode Workshop Productive of Ideas

As more and more attention is directed toward the nematode and its control, the question keeps coming up as to why this phase of agricultural pest control has not developed as rapidly as have the methods of keeping other pests in check.

In the recent nematode workshop sponsored by Shell Chemical Corp. in New York, some comments were made along this line that should shed a little light on the subject. Prof. W. R. Jenkins, department of botany at the University of Maryland, told the workshop group that this pest has operated in a sort of vacuum so far as research is concerned. Since nematodes are not insects, the entomologists have left them alone. Neither are they fungi nor bacteria, so plant pathologists have not regarded them as being directly in their field.

As a result, the pest operated for generations in a relatively unmolested state, causing agricultural losses calculated in the millions. Prof. Jenkins points out that the nematodes, practically invisible to the naked eye, cause poor yields and stunted growth in many crops. Farmers too often blame these conditions on a lack of moisture or lack of fertilizer.

"With our increased use of better cultural methods, the problem has persisted, so a different answer was sought," Prof. Jenkins explained. "The situation has seemed to become even more acute, and this may be attributed to our tendency to cultivate a single crop in the same field year after year. This practice provides a suitable host for certain nematodes and these species will build up into vast populations . . . up to several billions per acre."

Obviously, the larger the population of nematodes, the greater will be the damage to crops. The speaker warned, however, that rotation alone is not a sufficient answer to the problem.

Progress is being made rapidly in the control of many of the species of nematodes in different crops. This is a good start. The workshop idea as launched by Shell appears to be productive of good ideas in nematode control and suggests a pattern of "brainstorming" that may be valuable in fields other than nematode control.

Quote

"The main concern today is not with increasing the total supply of food in the United States, but with reducing the costs of production of each unit of food grown. It is the extra bushels and tons that reduce per unit costs of production and bring in the profits.

"We want to save plants, not the remnants. We want to warn farmers before damage is done, not console them after insects have chewed a hole in their billfold and weeds drained away their energy."—HoMar News Letter, issued by HoMar Agricultural Chemicals, Manhattan, Kansas.

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Feb. 4—Wisconsin Fertilizer and Lime Dealers Conference, Memorial Union Theater, University of Wisconsin, Madison, Wis.

Feb. 4-6—Association of Southern Agricultural Workers, Hotel Dinkler-Tutwiler, Birmingham, Ala.

Feb. 12-15—Maryland Agricultural Chemical Conferences; Episcopal Parish Hall, LaPlata, Feb. 12; County Bldg., Easton, Feb. 13; Francis Scott Key Hotel, Frederick, Feb. 15; Sponsored by the University of Maryland.

Feb. 17-19—New York Garden Supply Show, New York Coliseum.

March 4-5—Fertilizer Section, Southern Safety Conference, Hotel John Marshall, Richmond, Va. Quentin S. Lee, Cotton Producers' Assn., Atlanta, Ga., general chairman.

April 15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

Jan. 31-Feb. 1-2—Agricultural Aircraft Assn., Annual Convention, Californian Hotel, Fresno, Cal., Wanda Branstetter, Route 3, Box 1077, Sacramento, Executive Secretary.

Feb. 4-6—Cotton States Branch, Entomological Society of America, Birmingham, Ala. W. G. Eden, secretary-treasurer, Alabama Polytechnic Institute, Auburn, Ala.

Feb. 13-15—Midwestern Chapter, National Shade Tree Conference, Pfister Hotel, Milwaukee; N. B. Wysong, 536 N. Harlem Ave., River Forest, Ill., secretary-treasurer.

Feb. 14-15—Middle West Soil Improvement Committee, Edgewater Beach Hotel, Chicago. Zenas H. Beers, 228 N. LaSalle St., Chicago, executive secretary.

Feb. 19-20—Alabama Pest Control Conference and First Annual Meeting of the Alabama Association for the Control of Economic Pests, Auburn, Ala., W. G. Eden, Alabama Polytechnic Institute, Auburn, secretary-treasurer.

March 5-6—Western Cotton Production Conference, Hotel Westward Ho, Phoenix, Ariz.

March 6-8—National Agricultural Chemicals Assn., Spring Meeting, Fairmont Hotel, San Francisco, L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 11-12—Southwestern Branch, Entomological Society of America, Annual Meeting, Gunter Hotel, San Antonio, Sherman W. Clark, 811 Rusk Ave., Houston 2, Texas, Secretary-Treasurer.

March 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

April 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Dow Six Months Sales Increase, Earnings Decline

MIDLAND, MICH. — The Dow Chemical Company has reported sales of $307,309,509 for the six months period ended Nov. 30, 1956, as compared with $272,971,210 for the corresponding period in 1955.

Net earnings were $24,565,545, amounting to $1 per share of common stock outstanding as against $28,339,615 in the previous year which had amounted to $1.22 per common share. Shares outstanding were up from 23,284,713 to 24,685,323.

Earnings before taxes were down from $54,549,289 to $46,187,658. U.S. and foreign income taxes for the six months were $21,622,113 compared with $26,209,674. Depreciation and amortization were up slightly, from $37,592,000 to $40,314,000.

For the three months ended Nov. 30, Dow reported a rise in sales from $144,804,539 to $156,525,484, but a drop in net earnings from $16,615,968 to $13,290,230. Earnings before taxes were also down, from $33,055,433 to $26,022,554.

Taxes for the three months were $12,732,324 compared with $16,439,465 in the preceding year, while depreciation and amortization amounted to $20,127,234 compared with $18,849,000 in the preceding year.

Hooker to Continue Oldbury Trademark

NIAGARA FALLS—Integration of the former Oldbury Electro-Chemical Co. into Hooker Electrochemical Co., Niagara Falls, N.Y., has been proceeding very satisfactorily Bjarne Klaussen, president, said recently.

The designation "Oldbury Division," which was used on a temporary basis, will now be discontinued, he said, but the trademark of Oldbury will be retained in active use as "Oldbury Products." Oldbury, founded in 1896, was consolidated into Hooker last Nov. 30, 1956.

"Oldbury Products" will identify the chemicals produced in the former Oldbury plants, located at Niagara Falls and Columbus, Miss. They include phosphorus, phosphorus compounds, chlorates, perchlorates, oxalic acid and perchloric acid.

CROP GROUP TO MEET

CLEMSON, S.C.—The annual meeting of the South Carolina Crop Improvement and Foundation Seed associations will be held at the Wade Hampton Hotel, Columbia, Jan. 31. The program will include a talk by H. A. Woodle, leader, Clemson agronomy extension work on crop variety and fertilizer recommendations.

J. O. Mickelson

LEAVES HUDSON-HAMMOND — J. O. Mickelson, Minneapolis, has announced the termination of his connection with the Hudson Pulp & Paper Corp. effective Jan. 1. He has been a sales representative in the Upper Midwest for Hudson-Hammond multiwall bags since the consolidation of the Hudson organization with the Hammond Bag & Paper Co., Wellsburg, W. Va., last year. Previous to that he had represented the Hammond firm since 1942. Mr. Mickelson has been in the bag business in the Upper Midwest area for the past 35 years. He reports his plans for the future are indefinite but he intends to continue his office at 4606 Chicago Ave., Minneapolis.

William H. Coit in New Simplot Post

POCATELLO, IDAHO — The assignment of William H. Coit as J. R. Simplot Co. fertilizer division sales representative for Utah has been announced by Ben D. McCollum, division sales manager. Mr. Coit has taken up residence in Ogden, Utah, from which point he will cover the state.

Mr. Coit, 28, was born at Derby, N.Y. and attended Colorado College at Colorado Springs, where he acquired an educational background in botany. In June of 1955, he became a member of the Simplot sales staff, and was assigned to the state of Kansas.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $10 per column inch.

All Want Ads cash with order.

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TWO 750-GALLON BUTLER ALUMINUM tanks on skids, constructed to handle 30 lb. pressure. Tanks in good shape and well priced to move. Ipava Farmers Process Co., Ipava, Ill.

HELP WANTED

A number of openings are available in our Agricultural Chemical Technical Sales Service Department, working with fertilizer manufacturers. B.S. degree in chemistry, chemical engineering, agriculture or agronomy required.

Experience in fertilizer or allied industries desirable.

Excellent growth opportunities.

Mr. P. W. Bauman
MONSANTO CHEMICAL CO.
710 N. 12th Blvd., St. Louis 1, Mo.

AGRICULTURAL SALESMEN

Experienced in selling nitrogen products or other fertilizer materials to fertilizer manufacturers required.

Salesmen are expected to become familiar with the technology of ammoniating solution used in mixed fertilizer manufacture. Duties will be to sell the company's nitrogen products to fertilizer manufacturers.

In reply state personal data, education, experience, and salary requirements.

Inquiries held confidential.

Address reply to:

SOHIO CHEMICAL COMPANY
Industrial Relations Division
Box 628, Lima, Ohio

IRRIGATION CONFERENCE

URBANA, ILL.—An irrigation conference will be held at the University of Illinois here March 21.

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there is only 1 NEWSPAPER

Croplife
FOR RICHER FIELDS
PUBLISHED EVERY MONDAY
A WEEKLY NEWSPAPER FOR THE TWO BILLION DOLLAR AGRICULTURAL CHEMICAL INDUSTRY
AUGUST 23, 1954
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Impact of Farm Law on Industry Hinges on Diverted Acre Policy
Fall Fertilization, Need for Balanced Fertility Stressed at Wisconsin Ammonia Meeting
Minnesota Armyworm Campaign Saves $40 Million
DIRECT, PLANT DISEASE NOTES
See Page 4

Serving the Agricultural Chemical Industry . . .

Croplife is the weekly *news*paper for all phases of the industry from the manufacturers of basic chemicals down the production and distribution chain through the retail dealers. Croplife reaches *all* the key men in the industry. These groups are reading Croplife:

- **Fertilizer manufacturers, mixers and suppliers of fertilizer ingredients**
- **Formulators of Pesticides, Herbicides and other Farm Chemicals**
- **Retail Dealers selling fertilizer, farm chemicals and other farm supplies; Custom Sprayers, Pest Control Operators, and Nurserymen**
- **Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants**

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

Croplife's unique distribution plan permits advertising (1) on the national level to the manufacturing core of the industry, and (2) on the regional crop-area basis to the distribution segment of the market. Ask a Croplife representative to elaborate on this in terms of your product!

Your advertisement in Croplife will share the *impact* and *import* of Croplife as it reports weekly to the men who create action in the agricultural chemical field.

Croplife . . . for richer sales fields

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